

PLACING THE BLIND
AND VISUALLY HANDICAPPED
IN CLERICAL, INDUSTRIAL
AND SERVICE FIELDS



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PLACING the BLIND and VISUALLY HANDICAPPED
in CLERICAL, INDUSTRIAL and SERVICE FIELDS

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INTRODUCTION

In the light of favorable reactions to the two publications concerning blind professional workers* there were numerous suggestions that a similar manual be developed for workers in the clerical, industrial and service fields. This book brings those suggestions to fruition. This project was funded by Vocational Rehabilitation Administration, Research Grant No. RD 1901-S, to the Office for the Blind, Department of Public Welfare, Commonwealth of Pennsylvania.

Briefly, the procedures on which this publication is based were as follows:

(1) Cooperation was sought from all state agencies serving blind people in the form of (a) referring study interviewers to blind workers in the three specific fields, (b) referring study interviewers to employers who might be willing to be interviewed concerning blind workers, and (c) making it possible for study staff to do patterned interviews with counselors who were placing blind workers. The authors and all study staff wish to express their very great gratitude for the cooperation of agency directors, counselors and other staff in the 32 states which so generously responded to this request.

(2) Patterned interviews were developed for use with the above three types of respondents. Here the study staff wishes to express its gratitude to the advisory committee for general guidance of all these procedures, and especially for invaluable help in the development of the interview content.

(3) Persons of suitable professional background were selected, trained in the use of the patterned interviews, and sent into the field where they interviewed more than 800 employees, 236 employers, and 116 counselors and placement specialists. Because of incomplete data, occasional poor recordings and some losses due to individuals' not fitting our required limits for vision or job definition, the number of employee interviews finally used in the study is 752. All these persons are within the legal definition of blindness.

Perhaps our greatest debt of gratitude is owed to the counselors, employers and employees who gave of their time and energy for these interviews. Without their cooperation, all else would have been fruitless.

* Bauman, Mary K. and Yoder, Norman M. *Placing the Blind and Visually Handicapped in Professional Occupations*. Harrisburg, Pa. Office for the Blind, Department of Public Welfare, Commonwealth of Pennsylvania, 1962.

Bauman, Mary K. *Characteristics of Blind and Visually Handicapped People in Professional, Sales and Managerial Work*. Harrisburg, Pa. Office for the Blind, Department of Public Welfare, Commonwealth of Pennsylvania, 1963.

(4) All field interviews were electronically recorded, and the tapes were mailed to the study headquarters for transcription.

(5) Data for counselors and employers was treated through appropriate statistical and interpretive procedures and is reported in Chapters III and IV.

(6) Interviews with employees yielded two types of information: (a) Data not specifically related to the content of individual jobs was subjected to electronic data processing and results in the descriptive information reported in Chapter 5 and in the Appendix; (b) Data specific to the jobs was analyzed and written into the job descriptions which form Section II.

SECTION I

Chapter I

PLACEMENT — THE EARLY DAYS

In bringing to the profession of services to the blind the results of the research contained in this volume, it is necessary to lay the background against which modern day activities in placement of blind persons in industry, the service occupations and the clerical occupations was accomplished. What we know of placement today, its problems and its accomplishments, finds its earliest roots in the first quarter of this century.

In the intervening decades between the close of World War I and the beginning of World War II, these roots withered and very nearly died. However, there was sufficient fertility in the soil to enable them once more to come to life and ultimately to spring into full vigor in an ongoing program which over the years has seen greater numbers of blind persons gainfully employed.

THE EARLY DAYS

In the years preceding World War I pioneers in work for the blind called for activity in the area of job seeking and job placement for blind and visually impaired persons. Much of this effort is reflected in the annals of the American Association of Workers for the Blind, and in other literature of the day. As a matter of fact it is not suggested that this concern developed only after the turn of the century for preceding 1900 there were a number of authors including Sir Francis Campbell who wrote vigorously and spoke vigorously on behalf of blind persons in the competitive world of employment.

Much of the employment available to the blind was developed in protected workshop settings. Those trades now considered traditional were the backbone of the employment effort. Broommaking, weaving, caning and related activities formed the core of essential employment activity. This does not suggest that these jobs in the early 1900's and as they are now, are unskilled operations, for one need only observe the method of making brooms to realize that either in the hand process or in the power machine process this is a highly skilled operation.

In the pre-World War I period there was simply no organized effort in a relatively cheap labor market to place visually handicapped or blind persons, much less any other kind of disabled person. With the outbreak of World War I and the depletion of an available labor market blind persons began to find their way into industry in limited kinds of jobs, namely, assembly, inspection and on a few machines. This acceptance into the competitive labor market was shortlived for with the return of

the men from the Armed Forces all of the blind were returned to the role of sheltered shop employee, unemployed, or beggar.

Here and there, however, a blind person made the grade and stayed in the competitive labor market. A few with proper support, family influence, or more than a little bit of luck established themselves professionally but in the main with the close of the first quarter of this century the employment of blind persons in competitive employment had not taken hold with the end result that the protected or sheltered workshop movement strengthened.

THE DEPRESSION ERA

With the onset of the great depression employment for all categories of persons reached a low ebb and the fate of the disabled person seemed doomed to a greater degree of finality than in the first quarter of the century. Yet, during this period a few persons concerned themselves with the need for the blind to become employed when and wherever possible. Thus, many of these people found opportunities in programs under the jurisdiction of the WPA or other governmentally supported work projects. These offered not only training but an opportunity for blind persons to demonstrate their ability to compete with their sighted colleagues.

It was during the depression that the pioneers in modern concepts of placing the blind in competitive employment began to cross the horizon and, because of their activities and interests, made sufficient impact, ultimately leading to the establishment of the Division of Services to the Blind in the Office of Vocational Rehabilitation.

It would be impossible to write any volume on placement in these areas without mentioning the names of Joseph F. Clunk, former Chief of the Division of Services to the Blind, Office of Vocational Rehabilitation; the late John H. MacAuley, who came from the State of Washington to become a national figure in developing placement techniques and opportunities; the late Hiram Chappell of Oregon who not only contributed much in the industrial placement area but also began to develop programs in agricultural activities for the blind; Col. E. E. Baker of Canada who in the depression years, as managing Director of the Canadian National Institute for the Blind, began to build a program of competitive placement throughout the provinces; and George Meyer, the former Executive Director of the New Jersey Commission for the Blind, who also pioneered with his staff in developing placement opportunities commensurate with the skills and abilities of blind persons.

These are but to name a few and certainly an incomplete list of men whose foresight, ingenuity and skill built the foundation and set the cornerstone for the rehabilitation programs serving the blind today; and as blind individuals they themselves set standards for their own accomplishments which since have served as beacons for those who have come, in the subsequent decades, to carry on the work and to build upon foundations which they established.

WORLD WAR II

With the opening guns of World War II in the late thirties the tail end of the depression era began to dissipate and American industry once more opened its doors to supply the overseas trade. As this productivity expanded, the WPA, its training programs and employment programs faded, and the blind were once more caught in a limbo of sheltered shop, unemployment and/or the newer possibility of running a vending stand on government property.

With the entrance of the United States into two theaters of conflict, industry lost a usable source of manpower to the military and so it began to turn to the reservoir of the disabled to meet production needs. Consequently, state and private agencies for the blind began to hire persons to make contacts and find jobs which could be done by the blind. As the initial impact of manpower shortages hit this country the placement of blind persons in competitive employment grew rapidly. Such placements were made with little concern for the capabilities or skills of the individuals but with more concern that there was sufficient body temperature to indicate life.

Prior to 1944 many of the theories expounded by Joseph Clunk and subsequently demonstrated by him were put into practice. In his basic concept of placement Mr. Clunk argued that it was a matter of "selling" the employer on the capabilities of a blind person and not "begging with hat in hand" to find a place for a poor blind man in the organization. From this philosophical concept, and with the refinements of job demonstration, placement and follow-up, began the professionalization of placing blind persons in industrial, clerical and service occupations.

P. L. 113

In the mid-forties Congress enacted P. L. 113 and these were the first major amendments to the Rehabilitation Act of 1921. With the enactment of these amendments real impetus was given to the whole field of vocational rehabilitation and the then Office of Vocational Rehabilitation became concerned with the continuing placement of blind persons in competitive occupations. Under Mr. Clunk as Chief of the Division of Services for the Blind, OVR produced a series of six weeks training courses for rehabilitation counselors in state services for the blind.

It was with the inauguration of these courses that John MacAuley, Art Voorhees, Hiram Chappell and Jim Hyka made real contributions to the future of placement. Theories were put into practice and were field tested by a new crop of semi-professionals who in the intervening twenty years either made the grade or dropped by the wayside. At least it can be said of these initial groups that while they may not have been well grounded in psychology, the refinements of counseling and other more definitive aspects of the job today, they did come away from these training courses

with a sound knowledge of production requirements, jobs and job skills, a confidence in the product they were to sell, an ability to sell, and a desire to advance the cause of placement.

During the late forties, when under the direction of John MacAuley, a refresher training program for counselors was undertaken in a mid-western state, a local newspaper reporting the event said "a little band of brave, blind men, under the direction of John H. MacAuley went forth today to sell industry in our town on the employment of blind men and women." Obviously, this reference did not sit well with the participants in that little band but in retrospect they earned the right to be called brave for they were doing a placement job without the benefit of peripatology, typhlology, rehabilitation centers, adjustment training centers and a collection of advanced degrees. Let us hasten to add this does not imply that they necessarily did a good quality job, but in light of developments of the last two decades it must inevitably place them in the category of either being brave or being just plain "damn fools."

SYMPTOMS OF GROWTH

As the provisions of P. L. 113 became fully operative and as the federal office of Vocational Rehabilitation extended its interpretation of the act through the issuance of new and amended regulations, state agencies began to move their placement programs into high gear. As a matter of fact, it became evident that the placement problem of the blind was sufficiently difficult and severe to warrant the establishment of separate state agencies. Since 1944 there has been a steady growth in this direction although nationally there may be some division of opinion as to the wisdom of this. Nevertheless, production figures released support the view that the separate state agency with a multiplicity of services designed specifically to assist blind and visually impaired persons does do the best job of total rehabilitation.

However, it was not until the close of World War II that placement of the blind began to emerge in its present form. Again, as men returned from overseas duty to take up their normal responsibilities in industry, service occupations, and the professions we suddenly realized that placement of blind persons required more than "selling" an employer on an idea. In this shifting economic structure many blind persons again found themselves outside of the pale of private industry, not so much because they were blind but because they were not well founded, independent, personally capable individuals.

Industry, too, found itself no longer operating on lucrative government contracts with a cost plus arrangement. It found the need to return to a highly competitive civilian market with all of the conversion pains from war time to normal production. Employee flexibility became the cry and it was argued that blind persons were simply not sufficiently flexible to be shifted from one operation to another and that special gadgetry was required, along with a host of other arguments, reasons and excuses.

As a result, the rehabilitation counselor or placement man found it necessary to back off and to reappraise the product he was merchandising. What was wrong with it? The product so readily acceptable and so neatly packaged in the war years simply did not have a customer demand. What to do about it? To answer this question there seemed to be two self-evident propositions. One, to return the product (a unit of blind labor) to the design board or laboratory for reworking to make it competitive with the sighted labor market. To this end we saw the beginning of the Adjustment Training Center concept and somewhat later a development of the Rehabilitation Center concept. Two, this retrenchment of industry and of the entire competitive labor market seemed to be an acid test of the quality of salesmanship on the part of the counselor during the war years. If he had truly sold his customer, the employer, on the idea that he had jobs that could be done without sight, then there was no major problem in reintroducing blind labor as a redesigned product at a later date. If, however, in his anxiety to make placements he had taken the pot and pan approach, then in most instances he was persona non grata when endeavoring to resell the customer. Certain aspects of these selling philosophies will be considered in the subsequent chapter.

From 1944 to 1954 placement of the blind in the competitive labor market experienced a period of trials and tribulations but again leadership and the indomitable spirit of individuals around the country determined that the gains made during World War II would not be lost and that the placement of blind persons competitively had established a reputation which might well be expanded into a permanent part of the American economy. But as we stated before, this required re-engineered concepts and a firm recommitment to the value of the product to be sold.

THE PERIOD OF TRIAL AND TRIBULATION 1949-1954

Mobility, flexibility, adaptability, the total person, the team approach—these became the watchword of competitive placement market and the war cry of the rehabilitation agency. In an over exuberance to prepare an individual for his competitive place in the labor market the rehabilitation agency assumed the posture that every applicant for service had to be psychologically evaluated and tested, physically diagnosed and repaired, vocationally diagnosed and prepared, trained, retrained, evaluated, re-evaluated, and with a degree of temerity hopefully placed. We are not suggesting that the above was unreasonable and unnecessary but there is a reasonable area of doubt that every customer for service needed the full and complete treatment.

Industry sought flexibility and adaptability in its employees. These were the necessary criteria which agencies for the blind had to meet if they were to return a unit of labor (a blind person) to full, gainful employment. We were on the threshold of the era of automation but not yet arrived. The employee blind or sighted needed to be moved from job to job quickly.

Industry was not thinking in terms of long runs of parts in the thousands, hundreds of thousands, or millions because they were constantly redesigning products to compete in the ever changing consumer market. Thus, the employees were shifted from job to job and had to be relatively mobile within the framework of the particular plant.

Likewise adaptability was a key to the post war industrial boom. Industry had seen the value of training its work force during the war years but much of this training was pointed toward proficiency in one or two areas of productivity. Now the new breed of employee had to be completely adaptable and this adaptability included (a) reading of blue prints or job instructions; (b) quick comprehension of set up techniques; (c) learning a variety of production operations quickly; (d) techniques of inspection; (e) on occasion, stock handling.

These were requirements which provided trials and tribulations to the placement man. However, with these trials and tribulations the placement man himself began to develop certain ground rules and standards which his product had to meet before he considered it ready for introduction to the market.

REDESIGNING THE PRODUCT—THE BLIND PERSON

While we may blithely speak of the blind person as a product, a unit of labor, and of the need to redesign and repackage this product, it is not intended to take a somewhat callused view of blindness and those persons who may experience this disability. Unfortunately, so-called professionals in the field of services for the blind who have failed, did so because they forgot that in working with a person they were dealing with a human life and not raw material that could be scrapped, remelted, recast, and re-introduced to a production line. Thus, when we speak of developing a marketable product for the competitive labor market and when we speak of redesigning it to meet market needs we inevitably assume an awesome responsibility for it is a human life with which we deal and we most assuredly cannot afford mistakes.

Let us therefore take the applicant of the late forties or early fifties and the applicant of today and ask what are the strengths which must be built into this product in order to make it acceptable to the industrial, the clerical and the service occupations, for the demand fifteen to eighteen years ago is not essentially different from the demand today. Some of the training and technical knowledge may differ greatly but the requirement for individual and personal attainment does not differ greatly.

Over the years there has been major refinement in the psychological testing techniques. The results of these batteries are not final judgments but are good indicators of what one may expect under certain circumstances, stress and non-stress of a product. These tests were the initial guideposts for the counselor and the client achieving an employment goal.

The Adjustment Training Centers built their earliest programs around the need of the blind individual to become mobile. Travel instructors without the benefit of degrees in peripatology taught cane technique. Their clients became sufficiently mobile to travel city streets safely, to board and to disembark from transportation, to learn travel routes between their homes and prospective place of employment and to gain these objectives with reasonable grace and balance. In retrospect, these objectives do not differ from the current approach. Perhaps those clients who attended the earlier adjustment training centers were not as well versed in skeletal, muscular, circulatory and other anatomical systems nor were they particularly familiar with kinesthetics but on the other hand they did get from one place to another and did a pretty good job of pioneering the capability of a blind person to become self sufficient.

Other refinements in the early history of the Adjustment Training Centers were considerations of demands of daily living, personal grooming, and group discussions now termed group psychotherapy, job try-out and to a limited degree job training.

From this exposure the blind client developed a sense of independence, gained confidence in his own skills and abilities, with the end result that the placement officer or counselor had some sales material with which to work. How well the products of these early Adjustment Centers were truly adjusted may be open to argument in light of the present day concepts yet for the ardent proponents of the well staffed plush center of today, there is one incontrovertible argument which the old-timers can offer. These products were placeable, they were placed and in a vast majority of instances remained on the job at least until the full bloom of present day automation caused a retrenchment. Yet this cyclical retrenchment is in a sense no different from that which occurred at the end of World War I and at the end of World War II.

Lest the reader believe that there are only two steps leading to placement, namely, testing and the adjustment center, we hasten to add that training became an essential. During the World War II period most of the training was done on the job because units of labor were in high demand and the employer was quite willing to start from scratch. After that period, however, the employer wanted an individual who had a basic knowledge of equipment, the handling thereof, and as we have stated in previous sections, flexibility and adaptability.

Accordingly, the rehabilitation agency began to develop vocational school facilities. Machine shop, electrical shop, small motor repair, spot welding, use of hand tools, woodshop and other similar experience gave to the blind individual a working knowledge not hitherto available. Selected faculty members of the vocational schools were exposed to the training techniques and individual classes of blind persons were organized or on rare occasions the blind persons were integrated into the sighted classes for training. This is not to suggest that these people came out as machinists, experts in the various areas, but rather had a working competency which

made their skills more marketable in the community. Along with this more technical training, the service occupations and the clerical occupations received attention. The dry cleaning industry, food processing and packaging, laundry, hospital, stockroom, etc. all became prime areas for placement.

Transcribing typists, receptionists, and in rare instances switchboard operators found satisfaction in the clerical field. In each of these areas, industrial, clerical and service, skepticism concerning ability of blind persons continued but as more and more placements were made the employer became aware of some of the advantages and accepted the concept of jobs which could be done without sight.

By the time we reached the mid-fifties the placement man who had experienced this first decade under the impact of the Bardone-Lafollette Act (P.L. 113) not only saw a great change in the product which he was merchandising but, had he examined himself in the reflected mirror of reality, he might have realized that he too had undergone a great change.

With the less plush years of World War II his product, blind labor, was in demand. He took orders for his available qualified caseload, put them into a job, and frequently forgot about servicing that placement. This is why the customer, the employer, did not in a freer market decide to purchase the product again.

As we approached the mid-fifties the placement man of necessity changed his technique from that of a hot-shot order taker or a pot and pan salesman, to a one of skill and competitive outlook with that of his fellow merchandiser of steel, lubricants, etc. No longer could he afford the luxury of a tight labor market. His product of blind labor had to meet the requirements of current market conditions. He had to have confidence in what he sold. He had to make recalls when the customer exhibited interest but did not commit. He had to get firm commitments and above all once he sold his product he had to be willing to service it by follow up calls.

There are those who would argue that the rehabilitation agency then and today never relinquishes its claim on a placement. The agency has been charged with paternalism and maternalism. With this charge we disagree heartily. To follow up or to service a placement is no more than any other reputable sales organization would do with a product which it merchandises to a customer and from which customer it expects additional orders. The broad spectrum of placement of the blind today would not have developed to the point at which we find it, unless this practical business application had been adopted and implemented.

As 1954 approached there were cries of woe from the counselor ranks on the basis that we were now scraping the bottom of the barrel, that placements were becoming difficult and that you just couldn't get them into industry, service occupations or the clerical field. Then, as now, there is a simple but factual answer if we accept the principle that the incidence of blindness continues at a constant rate per one hundred thou-

sand of the population. There is little difference in the availability of clients now, in 1954, and 1944 or prior to that date.

If there is any difference in the available product today, it is that through modern techniques, medical, surgical, psychological and rehabilitative, we are in a stronger position to take the less likely product and develop him or her into a salable unit in the labor market. The real problem with the placement of the blind is not the availability of clients; the real problem has been the stodgy, traditional, unbending, unyielding, unimaginative attitude of many of the public and private agencies toward blindness itself.

1954-1965

Because the essential portions of this volume deal with placement in the industrial, clerical and service occupations of more recent date, we shall limit this section to a few pertinent comments and observations. With the amendments of 1954 to the Vocational Rehabilitation Act, the breadth of service expanded, new concepts which were germinated between 1944-1954 were funded. Emphasis in research and demonstration, expansion and improvement, selected demonstration and other projects contributed to the growth of placement of the blind.

With these amendments came the underwriting of training programs for rehabilitation staff, rehabilitation counseling, social work, physical medicine, medical research and, more recently, mobility instruction and home teaching, all of which provide the individual with an opportunity for the achievement of advanced degrees.

As automation reared its ugly head the rehabilitation agencies for the blind were faced with the problems of bringing the benefits of the new techniques in diagnosis, training and placement, together with the advanced training of potential staff in an effort to solve the rapidly growing displacement problem in industry. Over the past eleven years rehabilitation agencies experienced some decline in the number of industrial placements.

This decline, however, has been offset by increased placements in the clerical and service occupations and by major increases in the semi-technical or technical areas, directly related to industry. Here again, there has of necessity been a shift in the training effort and a shift in the selectivity of the individual but records indicate that there has not been an overall diminution of placement.

Coupled with this increase in the placement record has been a steady growth in employment in the professional levels but if the public and private rehabilitation agencies serving the blind are to keep pace with the demands of the labor market today and in the future there must be an overhaul in operating methodology. In general we have agreed that the application of certain business practices to the rehabilitation process is sound. Let us carry that concept one additional step. Productive industry

today carries on an active program of product research and development, of market analysis, of merchandising techniques and the development of sales methodology. These programs require varying degrees of financial investment and not in every instance will this investment pay off in profits; however, if by experimentation a company learns what not to do it may eventually reap a profit from that knowledge.

We submit that the same concept is not out of order for the rehabilitation agency serving the blind. Over the past two decades our major problem in the rehabilitation of the blind in competitive employment has been that we have been unwilling to experiment, to detail staff for market research and analysis, to plan ahead and to expend funds in a modest manner to know what the labor market of tomorrow and the day after will require.

Our placement of the blind has been predicated upon an already established labor market of one to five years duration with the end result that we have been remiss in developing training facilities and with the end result that when we have blind people ready to enter a particular field it is already well occupied by our sighted friends.

To overcome this traditional administrative handicap we suggest the following: (a) every public and private agency should develop and make staff available to know what the labor market needs will be one to five years hence; (b) having made this kind of analysis, through contact, study and observation, to develop training facilities for the blind to prepare them for available labor market; (c) to be willing to experiment in new avenues of training and in the minimum-maximum range of qualifications which the individual must have to succeed; (d) to provide the placement staff with all modern sales techniques to assist in attracting the customer's attention; (e) to develop an attitude toward salesmanship; (f) to develop an understanding of and respect for, sound sales management in order to develop the rehabilitation program for today and tomorrow with the same flexibility and adaptability in administrative concepts which were asked for by the employer of blind persons on the production line fifteen years ago.

The above would not purport to be an all inclusive list but we believe that it sets forth certain principles which are applicable and which can mean life to the placement programs of the future. With the current amendments of 1965 and all of the additional funding made available under this program, the opportunities are unlimited.

True, we can work with the physically handicapped, the mentally retarded, the emotionally disturbed, the hard of hearing and deaf, heart, stroke and cancer, anyone of whom may have the added disability of blindness, but all of the funding, all of the diagnostic, medical training and other services, can avail little in vocational rehabilitation if we have overlooked the marketing techniques through good, competent salesmanship.

Chapter II

INDUSTRIAL, CLERICAL AND SERVICE OCCUPATION PLACEMENT

SALESMANSHIP—DOES IT WORK IN SERVICES FOR THE BLIND?

In the previous chapter, we alluded to the development of a product which is useful to the customer and to the methods of marketing that product. In this chapter, we propose to examine the latter aspect more fully as it relates to the placement of blind people in the industrial, clerical and service occupations. While the counselor and his techniques of placement will be discussed in a subsequent chapter, for the purposes of this unit, we must look at the salesmen we have.

To place any product before the public, and especially before a specific customer, it becomes necessary to recruit a staff of competent sales personnel. This staff must also have good management, if there is to be product growth. What have the rehabilitation agencies done about this, and what are the specific concerns?

Over the years, the individual responsible for placing blind people has been a "jack of all trades". He has been a vocational counselor, an interpreter of psychometrics, an arranger of physical restoration and training, and finally a salesman. In all of the training and supervised experience, perhaps least emphasis has been placed on salesmanship. And yet without good salesmanship, no rehabilitation agency, no counselor, can meet the ever increasing demands for greater numbers of rehabilitations.

It was thought that with an advanced degree program at the university level, a better professional person might be developed and thus become available to the field. Unfortunately, in the overview of these advanced degree programs, much is to be desired for the deficiencies are self-evident. First, the field of rehabilitation is not getting its fair share of the finished product. Second, these programs have been spawned in the graduate schools of special education and psychology with little real emphasis in rehabilitation and placement. Third, the instructional staffs are becoming so inbred with the academician and so exclusive of the practical that the graduate student is ill prepared for a role in a salesmanship job.

We do not propose to belittle the graduate school programs. We merely suggest that they are not meeting the needs—indeed the demands of vocational rehabilitation. They are producing academic poll parrots who know the vocabulary, who perhaps can counsel, but who seldom can do a real, thorough job of placement. The theory seemingly is, "Do as I tell you, Mr. Disabled Person, but please don't ask me to do it myself". There is little doubt that the counselor of twenty years ago left much to be

desired, but we are not so sure that the counselor of today does not also leave much to be desired in knowledge, in enthusiasm, and in belief in the product to be sold.

It makes little difference whether this product is blind, or has some other serious disablement. No employer is willing to hire unless he can be sold on the concept that the employment of that particular individual is useful, beneficial and productive for his organization. This can't be done by telephone, by letter or by sitting at a desk and telling the disabled person to go out and contact employers on his own. Despite all of the publicity and all the work over the past two decades, the average employer of today does not conceive of his organization having jobs that can be done without sight, for he firmly believes that everything he, himself, does is dependent upon his ability to see. Thus, there is real need for the trained counselor of today, but with some added knowledge in salesmanship and the techniques of selling, both of which are woefully lacking in the master's degree program at the present time.

WHAT DO WE HAVE TO SELL?

Too frequently, both public and private rehabilitation agencies having placement responsibilities are not quite sure what they have to sell. Uncertainty in marketing or selling is deadly. One need only ask why industry spends literally hundreds of thousands of dollars in sales training, sales organization, product development, market analysis, and so forth. It is first, to get an acceptable product, and secondly, to attract the customer to that product. But between the product and the customer is the salesman. His training must develop in him: (a.) A sense of confidence in the product. (b.) A sense of timing in merchandising the product. (c.) A sense of loyalty both to the employer (his agency) and to his product (the blind unit of labor). (d.) A sense of responsibility toward the customer, the employer of blind labor. (e.) An ability to employ all sales aides and techniques when indicated, to accomplish the sale.

If the rehabilitation process has been well planned, the blind client who is ready for placement should without question be a marketable product, and one in which the counselor or the salesman has complete confidence. Whenever a unit of blind labor comes off the production line of rehabilitation with flaws which preclude the counselor from having full confidence in placing that individual, something has been wrong with the process. On the other hand, if the product comes off the rehabilitation production line ready for marketing, and there are no self-evident flaws, and the counselor still has no confidence in the product, then he, the counselor, is in the wrong field of employment and should in fairness to himself and the agency get out of the business.

Assuming that the rehabilitation process has brought to bear on the client's needs all of the services which will make him employable, we then have a unit of labor that can be fitted into industry, a clerical or service

occupation, and there is no need for the counselor to go with hat in hand and to beg for a job. He must understand that what he has to sell is even today a comparatively new product, and that he will not sell every time he makes a contact, but as long as the door is kept open, he has every reason to believe that he can eventually make the sale.

How do we reach the potential customer to market our product? If the salesman-counselor is permitted to flounder in this area, then he will obviously flounder in every effort to make that final sale. Most programs of placement today are on a hit-and-miss basis, with little if any planning on the part of the counselor until such time as the pressures of a caseload awaiting placement build up and the supervisor insists that he do something about it. In today's job market, some counselors argue that there are simply no jobs which blind people can do; one can only draw from this statement that the counselor is uninformed, poorly trained, or downright lazy.

Let us list a few of the source documents from which the counselor may develop a list of potential customers. Many more can be added to the list, and the varieties of documents suggested below may be altered to fit the needs of a particular region, state or locality.

1. Subscribe to one or more of the national survey services generally available through a state department of commerce, giving information concerning new industries coming into a state or locality, home office information, product information, whether it is a new plant or expansion of existing facilities, and other vital data.

2. Industrial listings prepared by state or local Chambers of Commerce. The information contained in these will vary, but it is always useful to the counselor in doing a placement job.

3. Most states, through the Department of Commerce, or Department of Labor, produce detailed volumes, regularly updated, on all manufacturers and employers throughout the state, giving number of employees, male and female, number in production versus management or supervision, type of labor organization holding bargaining contract, types of products manufactured or services provided, home and branch offices, if located in state, home office and other pertinent data, if out of state. These are generally available to sister state agencies without cost.

4. Job openings listed in the daily newspapers. Many can be ruled out; some are worth investigating.

5. Develop and cultivate a working relationship with the employment service offices.

6. Develop ties with industrial redevelopment authorities.

7. Maintain personal working files on new industries or other employers coming into an area.

Our experience indicates that any good combination of the above will work for the individual who must do placement. It does not appear that there is a lack of sources of suggestions concerning opportunities in the industrial, clerical and service occupations, but rather that the counselor

lacks the courage, knowledge and organization to use these available assets. Unfortunately, our customer, the employer of today, is not calling our local office and ordering or reordering the product. Before this halcyon day of placement can occur, the customers must be thoroughly sold. But before they can be thoroughly sold, they must be reached, reached on a personal basis. This means simply that the counselor must so plan his work that he can make regularly scheduled customer calls and, above all, follow up on them. However, we will touch on this matter a little more thoroughly in the paragraphs below.

ORDER TAKING OR SELLING

Generally speaking, selling today can be divided into three broad fields of activity: 1. The order taker. 2. The salesman. 3. The "big sell" or con man. Because in the field of rehabilitation we have seen all three operate, let us briefly touch on each, with the expectation that the counselor of the future may sincerely become a salesman and escape the pitfalls of the order taker and the "big sell" man.

Whenever there is a product scarcity and the customer has a high demand, some individuals in the field of selling fall into the inevitable trap of becoming order takers. There is no real skill in this, for the customer needs the product and the person handling the product simply supplies a demand without too much consideration for the future or repeat orders. These types of sales have been called "pot and pan" sales, although our friends who are engaged in merchandising pots and pans may here-with cast an objection.

However, if any of you have experienced a cookware demonstration and then have had the follow-up to that demonstration foisted upon you, you are well aware of the point we are trying to make. The demonstrator or salesman, if you wish to call him that, calls on you after the demonstration, showing you the chart of the entire set of cookware at a somewhat exorbitant price. His entire sales pitch is to get you to sign the order blank with the most expensive set in mind. He moves quickly toward his sole objective of pushing the order pad and a pencil within easy reach, hoping that your sales resistance, if any, is at a low ebb.

If he cannot get an order for the most highly priced set, he then flips the chart to a lesser combination, but still expensive set. His gears are shifted, understanding your fiscal problems, and trying to accommodate your situation with the hope that he can place a set of this outstanding cookware in your home. If by any chance your sales resistance is still up, but showing evidence of waning, the flip chart is then moved to the next set, and so on down, until eventually at the bottom of the chart, he will exhibit two or three pieces, possibly four, which is the minimum set beyond which the company positively will not break down and merchandise. Careful analysis indicates that even this set can be expensive, but at each step of the way, he is urging a signature on the order blank. Most people will fall for the final effort and sign, with the positive assurance

from this gentleman that if anything goes wrong with the cookware, or they are unsatisfied after delivery, they have but to call him and he will be glad to service it. Have you ever tried? Once the pots and pans are delivered, the customer is on his own, and follow-up is non-existent. The objective is to make the sale, get the signature, and forget the whole thing.

Before turning to salesmanship, let's examine the "big sell". Essentially, those who are involved in the big sell, are no more or no less than confidence men; overstated advertising, misrepresented advertising, product misrepresentation and the whole package enter into their approach. It differs from the pot-and-pan man because in the former, there is at least a reputable product involved. Generally speaking, in the "big sell" there is an inferior product well advertised, well misrepresented, packaged neatly, delivered, the money taken, and at the end most of the people involved in the "big sell" racket have no legitimate address, or at best, a temporary one, and are then on their merry way to corral the next victims.

In some instances of "the big sell" no product was actually delivered after the customer's money was taken, and yet day after day after day people continued to fall for "the big sell", including reputable businessmen in the community.

Salesmanship—what is it? We can offer but a crude definition, since we are not sales managers, or artists in the field of selling. We believe that for our purposes, salesmanship is belief in a product, the ability to interest the customer in the reliability and quality of the product, the ability to get his, the customer's, consent to use the product, and finally, standing behind that product with service. In other words, salesmanship differs from order taking and the "big sell" in that the reputation of the company and the salesman are placed with the customer's signature on dotted line. Now, let us examine how these three areas have to a greater or lesser degree become involved in placing the blind.

In the tight labor market, the new counselor, and even the old counselor, frequently falls into the trap of taking orders because the employer is in need of personnel and will use any available reservoir to meet his production needs. Placements may be made with relatively little consideration as to the durability of that placement, and in a sense with the expectation that if, like a piece of equipment, it doesn't work out, it can be dumped on the scrap heap. No follow-up is carried out, but the number of placements looks good on the counselor's records. There is one manner in which sales management, or agency supervision, can check on the order taker. Examine the number of placements, examine the quality of placements, and then examine the number of repeats this man has of placements coming back for service. One other factor may be considered in evaluating the order taker's technique. Does he ever make recalls on the employers with whom he made the initial placements. If the answer is no, or seldom, then you have an order taker.

There is one other characteristic which the order taker may have. Instead of using a degree of pressure to accomplish the pot-and-pan sale, he may reverse the procedure and take on the characteristics of a poor struggling down-and-outer, whose next square meal depends upon the customer's understanding, sympathy and help. The hat-in-hand technique, apologizing for the fact that you represent an agency for the blind, and that you represent blind people who are in need of employment, may secure a few placements, but it will not insure a successful career in vocational rehabilitation service to the blind. At this point, it is certain that some of the old timers in the field will scream "we have never done this". The only defense we can offer is "Gentlemen, think back over the years, and do you really mean it."

The "big sell" man is less frequently found in work for the blind, although on occasion there has been evidence of some being around. This is the kind of individual who goes in to the employer with almost unbelievable tales of the accomplishments of blind persons, with guarantees that he knows full well he cannot keep, and upon receiving an order, he drops into the lap of the employer some poorly adjusted, unequipped, untrained blind person as a reward for the employer's confidence. The end result of the "big sell" is irreparable damage to the field of placement, to the agency which he allegedly represents, and unfortunately to the development of work opportunities for the blind in the community or region in which the "big sell" man is working. Hopefully, when these "hot shots" ride across the horizon of placement, they can be ridden down and out by competent supervision. However, frequently supervision is so engrossed in other activities that the "big sell" man has alienated the employers before anyone is sufficiently aware of what has happened.

The skilled salesman is rare in marketing today, and even rarer in the field of services for the blind and in placement. There is basic tragedy in the fact that in the academic preparation of the rehabilitation counselor, no emphasis is placed on sales techniques, on the responsibility of a salesman and on the modus operandi of a competent salesman. Regardless of whether the counselor is being prepared for work for the blind, or for service to the general disabled population, if he is going to do a real job of placement, he needs to know, to practice and to apply the basic principles of salesmanship. Without these, he must inevitably revert to the pot-and-pan or "big sell" man.

More than ever, services for the blind today need counselors and placement people who are aware of the basic principles of selling, who are willing and able to apply those principles because they believe in their product, because they are willing to service that product, and because they believe that a rehabilitation agency for the blind is an on-going substantial organization that will stand behind them when they do merchandise the product. Beyond the mere application of principles of salesmanship, the counselor of today must be sharp in appearance, and above all, must take a lesson from the book of all salesmen, that having developed a customer's

interest, he makes regular call backs. If dates are suggested, be there. In reviewing the activities of counselors throughout the country, one of the real weaknesses in their sales approach, is the indication that the initial contact was favorable, and that they were invited to call back in one, two, three weeks, or even a month; but the records consistently fail to show that such call-backs were ever made. One may draw the conclusion that the initial contact was not as favorable as the record indicated and therefore a call-back was not made, or a more deadly conclusion, that the counselor, having established a favorable entre, became no more than a stupid fool not to follow it up at the appropriate time.

Inevitably the question arises, how many times should we call back if we haven't made a placement? While seemingly given in jest, there is but one answer. Keep calling back until you have made a sale, or have been thrown out. However, with this caution, that after repeated call backs and no sale, you as the salesman and your supervisor as the sales manager, should analyze the situation to date and perhaps at some juncture a joint call should be made to settle the issue. While we will touch upon it more fully in subsequent paragraphs in this chapter, let us point out that one of the proverbial traps which a counselor or placement man digs for himself, is that he has really sold the employer, but he is unaware that he has made a sale and proceeds to talk himself right out of it. The art is to know when the sale has been made, to get the commitment, and then to get out quickly and gracefully.

THE CUSTOMER'S OBJECTIONS

In work for the blind a long and substantial list of customer or employer objections to hiring the blind in industry, in service, and in clerical occupations, has been developed. Not every objection is raised at every interview, but years of experience have indicated that at some time some customer (employer) will raise the issue. How to answer him and to satisfy him becomes vitally important to the counselor who is desirous of doing a good job of salesmanship. No salesman should argue with his customer. He must be prepared to answer every objection, every query concerning his product, calmly but always with confidence. If a question cannot readily be answered, there is no harm in telling the customer that you would be glad to secure the answer and get it for him. This keeps the door open for the inevitable recall, if skillfully handled.

Before proceeding, however, let us record for the reader this list of objections in order that they become a matter of record here, and while we will not propose to give answers to each of them, we can discuss several of the more important ones in brief. Let us preface this listing by indicating that there is no stock phrase, no pat way of preparing your answer. Know the objection, know the basis for an answer, but develop your own technique of answering the objection. Be sure, however, that

every answer you give the customer can be factually supported. If you believe you can fool him with unsupported statements, you may be the one who is really fooled.

The typical objections of employers to the employment of blind persons are as follows:

1. How will a blind worker get to the plant?
2. How will a blind worker get to his place in the plant or in the organization?
3. There is too much danger of a blind person falling downstairs, stumbling over things on the floor, or walking into moving parts of machinery or equipment.
4. Our insurance companies will not permit us to hire blind persons.
5. What effect will the employment of a blind person have on our compensation?
6. We do not have instructors who have had any experience in training blind workers.
7. Would you expect us to assume the additional costs in training a blind worker?
8. We do not have room to put in additional machines or equipment which would be necessary to compensate for the reduced production if blind persons were employed.
9. If I had a blind person here, how would I correct him if he made a mistake?
10. If this person were not satisfactory, I wouldn't have the heart to let him go.
11. We have only machine processes with very little bench work.
12. All of our machinery and equipment is high speed and dangerous.
13. This is rated as a hazardous industry, and you should not subject a blind person to such conditions.
14. We don't have long runs where the operator does the same thing day after day.
15. My friend across the street makes items which would be more suitable for a blind person, and I'll call him right now and have my secretary take you to his office.
16. I shall be glad to cooperate with you; and when we have an opening, I shall be glad to get in touch with you.
17. We had a blind person once, whose work was fairly satisfactory, but he didn't appreciate what we were trying to do for him; so I won't have another.
18. We had a blind person once whose production was only about fifty percent, and also his quality was not very good.
19. We employed a blind person once, but we decided the job was too dangerous, so we let him go.
20. We used to employ several blind persons, but that job is now being done by a machine.
21. We do not hire our workers. The union sends them to us.

22. I doubt that our union will be willing to accept a blind person.
23. The union's seniority rules would bar a new employee from any of the jobs in this plant which are suitable for a blind person.
24. The job you suggest calls for a journeyman's rate, and our union agreement requires that a journeyman must be able to do any job in his classification.
25. Most of our employees live in company houses, and we must take care of them first.
26. I do not believe a blind person can be employed here.
27. We are constantly moving materials through our crowded aisles, and a blind person would not be able to avoid trucks and cranes.
28. Give us a list of the plants where blind persons are doing the same kind of work, and we shall go see them.
29. We are five miles from the nearest public transportation.
30. All of our operations require visual inspection.
31. Our products must be absolutely sanitary, and I don't see how we can afford to hire a blind person.
32. Our customers might discount the quality of our products if they knew we employed blind workers.
33. I understand that part of our contributions to the Community Chest supports a workshop which employs the blind.
34. I understand that all blind persons receive pensions; why should we be asked to take care of them?
35. Since our work is of heavy nature, blind persons would not be able to stand it.
36. All of our work is of a special nature and requires the use of blueprints.
37. All of our employees are required to gauge their work with micrometers.
38. We do not hire persons who have progressive conditions, that will hasten retirement or increase days off, or their need for hospitalization.
39. Our unusually good safety record over the past years has given us the lowest compensation rate in the industry, and we would not want to do anything that would raise it.
40. All of our workers have been with us for many years and in order to hire a blind person, we would have to lay one of them off.
41. We save the jobs that blind persons might do for our old employees who are too old to work on the regular production line.
42. If we had to lay off a blind worker, he could not get a job elsewhere; and his full unemployment compensation would be charged against us.
43. I know that blind workers were used in war industry, but we are producing peacetime items on a competitive basis, and must get higher production.

44. We are planning to start production on a new item soon, and I am sure that we will have jobs that one of your people can do. I'll get in touch with you when we get going.

45. We are now working on a new union contract, and would not want to do anything at this time that would disturb those negotiations.

46. We are modernizing our plant, and our foremen are too busy to be bothered with a survey at this time.

47. We are changing our production methods; and any jobs you may select now might be eliminated later on.

48. What would the blind person do in the case of fire or fire drills?

49. I have a marvelous capable blind neighbor who has asked me about work in the plant, but I have never been able to find anything for him.

50. All of our employees must be able to read job tickets, tally production, and recognize color.

51. Our workers have to get their supplies from different places in the plant.

52. I am in favor of your proposal, but the decision will have to come from the home office.

53. Our medical department passes on all applicants, and they will not accept blind persons.

54. We had a blind worker who was the best producer in the shop, and the next one we hire might not be so good; and the moral effect on the other employees would be lost.

55. I don't believe that our labor demand will ever get so bad that we will be justified in hiring blind workers.

56. We are now converting to tape operated equipment.

The above list applies essentially to industrial placement; however, there are certain basic objections which cut across all lines and most assuredly include the clerical and service occupations as well. There are, however, one or two other objections specifically applicable to the clerical categories, and are as follows:

1. Our supervisors are too busy to correct the typing errors of a blind person.

2. All of our clerical jobs have filing responsibilities.

3. We use a multiple letterhead system.

4. How can they look up words in the dictionary for correct spelling?

5. A good deal of our work requires the completion of forms.

6. Only our receptionist switchboard operator uses dictating transcription equipment.

7. I don't know where we would keep a dog all day in this office.

8. Most of our employees are sociable and enjoy eating together and forming groups and clubs. I don't see how a blind person could fit into this pattern.

9. We have so many handwritten instructions accompanying the material, and you know how bad handwriting can be to read. Even our sighted personnel have difficulties with it.

10. Can a blind person really make change?

11. So many of the blind people I've seen, particularly the women, leave a lot to be desired in neatness, grooming and makeup. Our girls are attractive and I am not sure that a blind person would fit into our group.

Again, the above is not an all-inclusive list, but it indicates some of the additional objections which may be given to the counselor or the salesman when attempting to place in a clerical occupation. If the salesman knows his product, and if he can anticipate some of the customer questions, he is in a strong position to be prepared. Certainly, it is a foregone conclusion that a good salesman never provokes additional questions or objections. He answers all of them forthrightly and again with factual support.

For the experienced counselor, there is an answer to each of the objections in the above two lists. No two people will answer them precisely in the same manner, but each objection can be answered with confidence. Here again, in presenting the approach to the customer, in answering his questions and objections, in bringing the interview to a successful conclusion, it is essential that the salesman be aware of his language and vocabulary at all times. Words are important. How one puts them together to make a point may in a sense make or break the interview. Again, the "pat pitch" is not the solution to good salesmanship. Flexibility in thought, adequacy in vocabulary, and confidence in the presentation to the customer are the essential factors which will create success in placing blind persons in these occupational areas.

SALESMANSHIP

During the preceding chapter and this chapter, we have alluded to salesmanship as it relates to the vocational rehabilitation counselor, and we have made some disparaging statements concerning the lack of salesmanship training in the graduate courses now being offered for vocational rehabilitation. What are these essential principles, and more especially, how can they be applied to work for the blind?

Any salesman, whether he is selling blind labor, a product or a service, must inculcate into his thinking the following principles, each of which we shall discuss briefly in the succeeding paragraphs.

1. Get his attention. 2. Secure his interest. 3. Get reactions. 4. Get a commitment. 5. Close. Each of these steps may apply to an initial contact and sale. Seldom, however, will the counselor sell an employer on the first visit and complete a sale. In this instance, the areas of commitment and closure may include securing an assurance from the employer of his interest and the date when you can return for recall. Closing is winding up the interview gracefully, effectively, giving to the customer

an impression that you are considerate of his time, and that your time is equally valuable, and that there are some other customers awaiting your service. In the preceding pages, we have discussed several deadly sins which may be committed in the placement effort. One of the most deadly is to leave the impression that as an employee of a governmental rehabilitation unit, you would like to prolong the interview because you don't quite know where to go next, or what to do, and that time is heavy on your hands. The employer contact is a working relationship between a salesman and a customer, and while it may be friendly, it should not become a visitation, because the employer buys the salesman a cup of coffee, tells him a few jokes, pats him on the back and says stop in the next time, but never does hire a blind person.

Getting attention, how is it done? To get the customer's attention is the key to beginning a successful sales interview. In the case of the blind counselor or placement man, personal competency in mobility may be all that is required. The offering and lighting of a cigarette attracts attention. A businesslike approach, knowing what you want to say and how you want to say it, or a collapsible cane. Any or all of these are attention getters, and are fair game for the blind counselor to use in his stock and trade. The interview can get off on the wrong foot, if there is any indication that this is a "charity" visit, and that the employer is going to be asked for something he really doesn't want to give.

Getting his attention can and frequently does move smoothly and without effort into the creation of interest on his part if the salesman knows something about the employer's products or services, and has done some analysis thereof, before making the call. In the trade this has been termed "the preapproach"; it is an ongoing practice in all areas of salesmanship. Know your customer, know his operations, know his needs, know his problems, and offer your service to resolve these needs and problems. Such analyses will frequently present the counselor with adequate clues to guide the interview to the kinds of jobs which the organization may offer to blind persons.

Let us then turn to the creation of interest on the part of the customer. Why should any employer be interested in hiring blind labor, irrespective of the job level at which the placement effort is being directed. Any employer is desirous of having a dependable, productive, capable individual in his organization, for that individual, whether blind or not, will make money for him if the skills and the job are matched. Interest can be created immediately by indicating to the employer that you are not selling blindness, but that you have for him units of labor which meet all the normal prerequisites of productivity, but which incidentally are blind. Let us make it clear, there are no such jobs as "jobs for the blind." No industry, no organization, no service house, has jobs for the blind. They do, however, have jobs which can be done without the continuing use, or the use of sight. These are the jobs which we must seek out in industry, in the clerical fields, and in the service occupations. Thus, there

is a vast difference in philosophy when discussing with the potential customer, the employer, jobs for the blind or jobs that can be done without sight.

In developing the employer's interest, a number of useful tools are available, and this volume does not pretend, at least in this section, to offer a full list of these tools. However, a well planned pictorial volume of a flip chart is useful provided that the counselor knows how to use it, does not go through from beginning to end, is selective and gives only enough to arouse, create and sustain interest.

Many counselors have used the braille micrometer and other measuring devices in industry to create additional interest. The braille watch, the braille slate for note taking, and other devices may well contribute to the counselor's success. But let us make it clear that these attention getters can also derail the interview, if the salesman permits the customer to become overly interested in the tools and not in the purpose for which the call is being made.

Logically then, we have secured the customer's attention. We have created interest in our product, a unit of blind labor. It is at the point of creating the interest that we may begin to experience questions, which although not necessarily phrased in the language of objections, may in a sense reflect the doubt or objections of the customer. Here the skill of the salesman comes into full play, for he must answer these questions or objections and at no point lose the interest which he has created. Without making it obvious, it is necessary for the counselor to be in control of the interview at all times, but in so doing, he cannot become argumentative, overbearing, or discourteous.

The most experienced salesman in the world can and does, on occasion, lose control of the interview with the customer. But the technique of recovery comes from experience. If you have been knocked off balance by losing control of the interview, roll with the punch and at the apropos time, regain the initiative gradually, but firmly.

Getting reaction. Certainly an employer may, and on occasion, does react violently to the thought of hiring blind persons in his organization, and with this kind of explosion, the counselor must of necessity deal. But it is not the kind of reaction that we propose to discuss under the five steps of selling. For if you have created a situation getting attention, and subsequently creating interest, the salesman is always desirous of testing the depth and validity of that interest by getting reaction.

Customers have been variously described as doodlers, pencil tappers, the strong, silent type, the jolly type, interrupting with stories and quips, the "you're doing a magnificent job, but it's not for me" type, and so it becomes necessary to know the line of resistance which may be thrown up against one. This can be done by the insertion of a skillful question in the interview, a do you agree with that, sir, or a may I suggest ap-

proach. Again, there is no pat or patented way in which to develop a reaction. Much will depend on your personality and on the personality of the individual with whom you are then associated. If during the course of the interview you can get indications of agreement, then you have tested the degree of interest. If in seeking reaction, you still sense doubt, misgiving, or lack of understanding, then you continue to work on the creation of interest by under-cutting and allaying any doubts or misgivings. Without testing the maintenance of attention and the creation of interest by securing reaction, no salesman is ready to seek a commitment.

The ultimate in commitment on the part of the customer is his verbal agreement to buy. As we pointed out earlier, not every interview will make a sale. In working with the employer, we want commitments. Of course, if he is ready to hire on the first interview, then you have either done a magnificent job of selling, the employer has a prior favorable experience, or he is accepting the product to get rid of you, and with no intention of really keeping it or using it. Be sure, by agreement, that you have really sold him.

The kind of commitment we are looking for is a willingness to have jobs evaluated from the standpoint of whether they can be done without sight or not. To agree on policy of employment of blind persons, and to set a date if possible for the introduction of a blind person to his organization. A commitment can come any time after the first interview, but it does not necessarily mean that a blind person may become employed immediately. Circumstances will vary; however, if top management has committed itself, there will be an ultimate placement. It is essential once having obtained the commitment, to keep it alive and to close at the first opportunity.

Closing the sale is the delivery of a blind person to the employer, ready for work. This means that arrangements to clear through the medical and personnel departments have been accomplished, the job has been selected, working conditions clearly understood by the client, and that the product is ready to be installed into the productive line of the organization. Selling, however, does not stop with placement.

Any good salesman will tell you that follow-up is essential. First, it indicates to the customer that you, the salesman, and your company, are willing to stand behind the product. Secondly, it creates good will. Thirdly, it presents you an ongoing opportunity to sell, to maintain the interest which you have so carefully cultivated, and in a reasonable number of occasions, to place more than one blind person with the company.

Therefore, the five steps: get attention, create interest, secure reaction, get a commitment, close and finally follow-up, are the watchwords to salesmanship and the key to successful placement of blind persons in the industrial, clerical and service occupation fields.

NEVER SAY NO

Admittedly, this chapter is not all-inclusive, nor is it completely written in detail. However, it is designed to give the counselor certain guidelines and principles to follow and with which to appraise the three fields of employment about which the volume has concern.

The cry that there are no jobs in industry, in the clerical and in the service occupations for the blind is false. It is true that changing techniques of manufacture of necessity have changed our thinking, and our mode of selling the industrial employer. But we, the counselors, must be aware of these changes, must be adaptable and sufficiently flexible to meet the demand and, above all, the agencies which we represent must be prepared constantly to re-engineer the product of blind labor to meet the market requirements. Without this, any placement program will stall and be ineffective. The employment market at this writing, is as good or better than at any time in the past twenty years. Perhaps the real difference is that we have experienced far too much in the development of the counselor and far too little in the development of salesmanship. Neither can stand by itself. There must be a joining and a welding if the job of placement for the future in any occupational area is to succeed.

Too many persons with placement responsibility today are all too ready to accept the word "no" or too ready to accept the lack of a firm commitment on job order on the first try, to go back and back and back. How many times have you purchased something because a salesman had a degree of persistence, a lot of confidence, and sufficient drive to make recall after recall, once he had some evidence of interest from you?

While we purport to be salesmen of blind labor, let us not forget that we are also victims of salesmen providing products and services to us, and one may ask, "How did he succeed with me?" and apply that same success technique to placing blind labor.

The employment market of the future is wide open. Perhaps at no time in the history of work for the blind has there been greater opportunity, greater acceptance, and greater potential for placement than at the present time. All that is needed is to bring this interest to the forefront with skilled salesmanship. In summary then: 1. We have a product. 2. It is a durable product. 3. It is a competitive product. 4. There is a market for the product. 5. It has stood the test of time. If you, the counselor, are a true salesman, what else do you need to do the job?

Chapter III

THE REHABILITATION COUNSELOR — WHAT IS HE?

In the previous segments of this volume we attempted to outline for the reader the ultimate responsibility of the rehabilitation counselor, namely, the satisfactory placement in employment of the blind person. The basic skill required to achieve this ultimate objective is salesmanship. The rehabilitation counselor of today fits no perfect pattern, varies considerably in experience and background and may have strong opinions in respect to the necessary qualifications to hold the job.

Many State agencies for the blind use a team approach to placement. The rehabilitation counselor prepares the client for placement and the placement officer actually seeks the jobs, matching the skill of the blind individual to the job. In an equal number of agencies, however, the rehabilitation counselor must accept the client at the point of referral and carry the case through placement. As a result of interviews throughout the nation, succeeding portions of this chapter and the analytical tables will give the reader some indication of the rehabilitation counselor in services for the blind, but before presenting tabulations and findings, it may be apropos to submit a few observations for consideration.

The rehabilitation counselor has been described as, and has described himself as, an investigator, a buyer of services, a fixer of family problems, an evaluator of training facilities and programs, a super salesman both to the client and the employer, a keeper of records, an accountant of the agency's money, a statistician, a part-time administrator, a public relations man, a check writer, a part-time medical or other consultant and, on rare and precious occasions, a rehabilitation counselor. In a sense, that individual who accepts the responsibility of the referral, and the implementation of the total rehabilitation process leading to placement, must at some time be all of these. How the emphasis is placed and the kind of service given to the client must be the dual responsibility of the counselor and of his superior. While these activities may be the nuts and bolts of the day to day routine, we believe that a good counselor is somewhat above any or all of these.

It seems to us that if the rehabilitation counselor is to do a good job of placement in the industrial, clerical and service occupations today, and for the future, he must become proficient in three inter-related areas, analysis, planning and production. Let us examine each of these briefly.

His skill in analysis is two pronged. First, he must analyze all of the pertinent information concerning the client, his needs and his potential

and in so doing he must assist that client in understanding his limitations as well as his potential. To do this analytical job, the counselor must know where to get the information, how to have it interpreted, or to interpret it if he is so skilled, and then gain the client's full understanding.

The second prong is equally analytical in character. He must at all times be analyzing the job market, the training requirements to enter that job market, and the problems in the job market. As a result of this two pronged analysis, the client and he are in a strong position to enter the second area, planning.

Here again, the counselor assumes a dual role. First, he plans with the client those services which will ready the client for the optimum placement opportunity. Whether that opportunity is at the entrance level or not, is relatively insignificant.

Second, the counselor must plan his time in order to permit an adequate number of employer contacts, if he is to market his finished product. It is an accepted fact that in contacting the employer, much planning is required. These areas have been suggested in previous chapters.

Finally, the third and most important area, production, again assumes a dual role. Analysis and planning although basic and essential to do a good job, are useless if they do not culminate in productivity. Thus, if the counselor is to achieve placement goals, he must by good and substantial caseload management, produce enough ready clients for employment to meet the employment market demand. This requires a steady flow of the product (the client) from referral to the rehabilitation process, to readiness. Having accomplished this, the counselor must then set for himself reasonable goals of production placement in the competitive labor market. Counselors in the agencies for the blind have too long been satisfied with a "catch as catch can" production record. With the available training, specialized courses and good supervision, this philosophy is not acceptable.

As evidence of this fact, one need only examine the Rehabilitation Amendments of 1965 and the regulations issued pursuant to those amendments. The tooling to do the job has been provided and it is certain that no less than a quality, quantity job will be acceptable. If we can accept the propositions that a good counselor is an analyst, a planner and a producer, let us examine the results of interviews with persons in the field.

ANALYSIS OF COUNSELOR INTERVIEWS

As part of the study of blind workers in clerical, industrial and service employment, interviews were also done with 116 counselors and/or placement men in the following states:

Alabama	Connecticut	Kansas
Arkansas	Delaware	Kentucky
California	Idaho	Louisiana
Colorado	Illinois	Maryland

Michigan	New Mexico	Pennsylvania
Minnesota	New York	Puerto Rico
Missouri	North Carolina	South Carolina
Montana	North Dakota	South Dakota
Nebraska	Ohio	Tennessee
Nevada	Oklahoma	Texas
New Jersey	Oregon	Virginia

CLIENT SERVICES:

These counselor interviews always began with a discussion of clients placed by the counselor and interviewed by the research staff as part of the CIS study. This section of the interview sought to learn just what the counselor had done for each of these clients, what procedures he used in selecting the place of employment, reaching that employer, and making the placement. Naturally, each of these is a very individual story, in part reflecting the section of the country, the type of job in which the client was placed, and the specific characteristics and needs of that particular client.

However, the services rendered can be classified and counted and, in the hope that the clients discussed might be a fair cross-section of all clients, we present the following:

A specific statement that an ophthalmological examination was given the client appears in only 6, or 5.2% of the discussions. A specific statement that a medical examination was given appears in only 22, or 18.9% of the discussions. These figures seem very small and probably represent further ophthalmological or medical attention following the examinations routinely required for the original workup of the case for placement. Psychological examinations were mentioned by 56, or 48.3%, of the counselors.

The chief services listed were various kinds of training, as follows:

Vocational Training	mentioned by 70 or 60.3%
Adjustment Training	“ “ 62 “ 53.4%
Orientation/assistance on first day of employment	“ “ 17 “ 14.7%
On-the-job training (with some support by agency)	“ “ 10 “ 8.6%

Following placement, 50, or 43.1%, of the counselors stated that they regularly did follow-up contacts with the employer, while 13 counselors, or 11.2%, indicated that they did this under certain circumstances.

Family counselling was also mentioned, as a rather intensive part of the service by 17, or 14.7%, of the counselors, and as a casual contact by 24, or 20.7%.

Naturally, the individual items provided to clients vary not only with the needs of the client, but also with the jobs involved. The following were mentioned:

<i>Special Service</i>	<i>Frequency</i>	<i>%</i>
glasses or other optical aids	25	21.6
physical restoration	22	18.9
financial assistance	8	6.9
tape recorder	2	1.7
braille medical dictionary	1	.9
prosthesis	2	1.7
special braille cards for laundry cart	1	.9
projection microscope	1	.9
Edison Voicewriter for dictaphone	1	.9
clothing	3	2.6
special machine to shake down thermometers	1	.9
transcription outfit	1	.9
mimeographing service	1	.9
guide dog	2	1.7
special tape	1	.9
light probe	1	.9
typewriter	1	.9
brailier	1	.9
miscellaneous	7	6.0

Unfortunately, in view of the casual way in which these figures were collected (i.e., without formal reference to records), this may be more nearly evidence of what the counselor regards as important, and therefore remembers, than of the exact and total services rendered.

In 48 cases, there was some discussion of the counselor's doing a demonstration of the job himself, the question being raised either by the counselor or by the interviewer. Two counselors said they had never actually done one and were not sure how they felt about demonstrating the job. The others responded as follows:

Against	8
Fallacy (just because counselor can do the job, does not mean client can)	2
If this is necessary, means employer is not "sold"	2
Not necessary	1
Waste of time	1
Just wrong approach	1
Unless counselor is proficient, can do more harm than good	1
In favor of	38
Uses procedure regularly	12
Frequent but not regular	5
Limited use	9

Have specialist do it	3
OK if done right, but can do more harm than good	5
Use only as last resort	1
Favor but actually do not do	3

COUNSELOR CHARACTERISTICS

In addition to the above discussion of services to certain clients, the counselors were asked facts about themselves and their attitudes. The information gathered is detailed in tabulations which follow. We will discuss these briefly:

Table 1. Age:		%
Under 25 years	2	1.7
25 to 29 years	10	8.6
30 to 34 years	20	17.2
35 to 39 years	26	22.4
40 to 44 years	18	15.5
45 to 49 years	13	11.2
50 to 54 years	11	9.5
55 to 59 years	6	5.2
60 years plus	10	8.6
Total		116
		99.9

Although the counselors interviewed show a spread in age from under 25 to over 60 years, 55% are between 30 and 44 years of age. I would think this shows a smaller number of older individuals than one would find in most professional groups, perhaps reflecting the great increase in rehabilitation staffs in the past twenty years.

Table 2. Time in work for the blind:		%
Under 1 year	5	4.3
1 to 5 years	39	33.7
6 to 10 years	38	32.8
11 to 15 years	15	12.9
16 to 20 years	11	9.5
21 to 25 years	6	5.2
26 to 30 years	2	1.7
Total		116
		100.1

Further evidence of this recent rapid growth of agencies may be found in the fact that two-thirds of those interviewed have been in work for the blind from one to ten years, while roughly 84% have been in the field no more than fifteen years. Again, if we compared this with such fields as law, medicine or teaching, I think we would find that this is a young group which these other disciplines might scarcely regard as "seasoned." Perhaps this has something to do with counselor attitudes.

Table 3. Amount of vision of the counselor:		%
Totally blind	38	32.8
Light perception	10	8.6
Object perception	5	4.3
Travel vision, no reading	9	7.8
Limited reading of print	11	9.5
Read as necessary	6	5.2
No visual problem	37	31.9
<hr/>		<hr/>
Total	116	100.1

Roughly one-third of those interviewed are totally blind, roughly one-third have normal vision. The remaining third vary from light perception only to being able to read ink print as necessary, possibly with some special aid or with less efficiency than would be true with normal vision.

Table 4. Formal education of counselor:		%
High school graduate, not college graduate	14	12.1
B.A. or B.S. degree—4 yrs. college .	32	27.6
B.A. or B.S. degree plus some graduate work	28	24.1
M.A. or M.S. degree	33	28.4
M.A. or M.S. degree plus some work on Ph.D.	7	6.0
D.D. or LL.B. (following M.A.) ...	2	1.7
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Total	116	99.9

Roughly equal numbers—one-fourth in each case—have the bachelor's degree only, the bachelor's degree plus some graduate work, and the master's degree. However, 12% are graduates only of high school with very little in the way of college courses. Although seven are now doing work toward the Ph.D., no one in the group had yet attained that degree. We did have one Doctor of Divinity and one person with a law degree.

Table 5. What placement training has the counselor had?

		%
Carbondale	42	36.2
VRA sponsored short courses	42	36.2
State agency courses	27	23.3
Graduate courses in rehab.	25	21.6
Employment service, etc.	8	6.9
On-the-job training only	4	3.4
None	15	12.9

(Note: Since some counselors reported more than one of the above, no total is presented)

A number of those interviewed had had more than one type of training for placement and counseling of blind clients. It happens that exactly

the same number mentioned training at Carbondale and training in other VRA-sponsored short courses. Another 23% indicated that they had received special training courses and seminars within their own agencies. Nearly the same number indicated that in their graduate work, at various universities, they had received training specific to placement, either including or emphasizing the placement of blind clients. Eight people mentioned placement training in other agencies, such as the Employment Service.

Table 6. What other specialized training has the counselor had?

		%
Home teaching	8	6.9
Courses in counseling	41	35.3
Machine shop work	6	5.2
Law	3	2.6
Psychology	2	1.7
Teaching—education	4	3.4
Ministry	1	.9
None	53	45.7

(Note: Since some counselors reported more than one of the above, no total is presented)

We also asked whether any other training contributed at all to the counselor's effectiveness on his job. The most frequent response, given by 35.3% of those interviewed, was that general courses in counseling were very helpful. Six people felt that training in machine shop work had been useful and eight felt that their training in home teaching was applicable. Other people felt that their original professional training contributed something, even though it was in such fields as psychology, education, law and the ministry. It is natural that some elements of almost any professional training might at times be applicable.

Table 7. Attitude toward training at Carbondale:

		%
Did not attend—no opinion	74	63.7
Warmly enthusiastic—"best possible"	14	12.1
Very helpful (Of these, one thought it too long, one too short because trainees were worked 7:00 A.M. to 9:00 at night)	22	18.9
Counselor too new in his job to be helped by it	1	.9
Of little value because did not touch their specialization—agriculture chiefly	3	2.6
Would have preferred less classroom work, more in field	2	1.7
Total	116	99.9

Of the 42 people who had this training, 85% felt that it was either extremely helpful, the "best possible," or at least quite valuable and well worthwhile. Six were rather critical, either because it did not fit their special needs (such as work in rural areas), had been poorly timed in the sequence of their experience, or was too classroom-oriented.

Table 8. Counselor's previous work experience:

		%
Clerical	6	5.2
Industrial	43	37.1
Professional	57	49.1
Sales, public relations	26	22.4
Agriculture	8	6.9
General business—owner	1	.9
Armed services only	2	1.7

(Note: Since some counselors reported more than one of the above, no total is presented)

Roughly half of the interviewees had had some previous professional experience before entering work with the blind. However, more than a third had had industrial experience and stated that it was quite helpful in meeting placement problems, and 22% had some form of sales or public relations experience upon which they also drew with profit. Scattered experience was mentioned in clerical, agricultural and general business fields or in the armed services. Some counselors, or course, reported several kinds of previous experience. Generally speaking, all felt that some type of experience in the competitive world of work was desirable or at least useful as background for both counseling the client and meeting the employer.

Table 9. How did the counselor obtain his present job?

		%
Personal application	69	59.5
Agency approached him	23	19.8
Own counselor, he then a client	9	7.8
Transfer in agency	8	6.9
Promotion	3	2.6
Friend suggested it	3	2.6
No information	1	.9
Total	116	100.1

Roughly 60% of those interviewed had simply applied for their jobs through ordinary channels. About 20% indicated that the agency approached them, that is, knew them and liked the work they were doing in some other job, offered them the opportunity to become counselors or placement people. Nine had been clients of the agency and their counselors

suggested this employment. Small numbers transferred from other jobs within the agency or a related agency in the state, were promoted into the job, or were directed to it by friends.

Table 10. How did the counselor first enter work with the blind?

What motivated him to do so?		%
Social service motivation (usually blind himself)	54	46.6
Own blindness but no claim to social service motive	25	21.6
Simply because opening available, paid better than former job	22	18.9
Own counselor (he then client) advised him	7	6.0
Became interested through family or friends	6	5.2
No real reason—"just happened" ...	3	2.6
Opportunity to combine technology and sociology	1	.9
Not choice, is part of general rehabilitation job	1	.9

(Note: Since several counselors reported more than one of the above, no total is presented)

The major motivation listed, appearing in nearly half of those interviewed, is a motivation to serve and help others. Many of those giving this reason were, themselves, visually handicapped but this was not true for all. Another 21.6% definitely stated that their own blindness took them into this work, but their comment did not indicate a strong social service motivation—rather, perhaps, that this work was more available to them and they saw themselves as having what might be called special qualification for it. Another 19% definitely indicated that they took the job because it was the best thing open to them, paid better or had more status, or offered more chance of "success" than what they had been doing. A few others became interested through their own counselors or through friends who directed their attention to this profession. Three could give no reason and seem to have drifted into this field with no sense of calling or even logical choice. On the other hand, one seems to have made this a very logical choice on the grounds of combining technology and sociology; this seems especially worth noting because it seems to be the only case where the choice of field was made on quite impersonal, unemotional grounds.

Perhaps we are making too much of this point, but this data does seem to suggest that counselors and placement men enter the field for far more

personal reasons than would usually be true for other jobs, or even other professions. Curiously enough only one of the responses indicated that the individual had carefully weighed his abilities and interests in good career-planning fashion—although for the small number advised to enter the work by their counselors this may have been done (we hope it was done!) by those counselors. If we are right in our interpretation, it is relevant to consider whether the force moving the counselor toward success or failure may not also be different from those assumed in most workers in other fields.

Table 11. Number of placements in typical year:

		%
Up to and including 10	18	15.5
11 to 15	18	15.5
16 to 20	19	16.4
21 to 25	20	17.2
26 to 30	12	10.3
31 to 35	5	4.3
36 to 40	3	2.6
More than 40	4	3.4
No information or does not make placements	17	14.7
Total	116	99.9

These figures are based entirely upon the statements of the interviewees, not records. Interpretation is complicated by the fact that some of the counselors worked in the team procedure and this might create unrealistically high placements compared with people who work all the way through with the client. Also, we are talking about counselors with varying amounts of experience. I am inclined to feel that for those who indicate that they make more than 25 placements in a typical year, some additional details would be necessary to get a complete picture of just how they function.

Table 12. Use individual or team approach?

		%
Individual	62	53.4
Team	40	34.5
Modification of team approach	8	6.9
Both, depending on circumstances ..	6	5.2
Total	116	100.0

Slightly more than half use an individual approach, which obviously means that not quite half use a team approach, at least at times or in some modification. The team approach as the standard procedure of the agency is reported by just about one-third.

Table 13. Counselor's attitude toward team approach:

		%
Uses individual approach, question not applicable	62	53.4
Regards it as best possible approach .	27	23.3
Regards it as satisfactory—some reservations	20	17.2
Regards it as unsatisfactory, prefers individual	6	5.2
No information	1	.9
Total	116	100.0

We are frank to say that we do not know whether all counselors felt free to make unfavorable comments. At any rate, most of those who use the team approach speak well of it; only six, or 5.2%, were openly critical.

Table 14. How could the placement procedure you use be improved?

Only 33 suggested any improvement in procedure; some suggested more than one:

		%
More specialists needed to help counselor	18	15.5
Caseloads should be lightened	4	3.4
More lenient time allowance for placing	3	2.6
Group counseling is needed	1	.9
More effective supervision is needed .	3	2.6
More time and money needed for evaluation	3	2.6
More help needed with paper work ..	4	3.4
Wonder if client can relate to so many—members of team	2	1.7
More coordination is needed	1	.9

Again, we may not have received completely frank answers although we tried hard to establish a rapport which would result in frankness. At any rate, only 33 interviewees made any suggestion and 18 of these expressed a need for help, usually specialized help to bring to the placement process knowledge of industry, or of agriculture, or even of sales and vending, details which the counselor could not bring. Small numbers seemed to feel the pressure of time and asked for lighter caseloads, more lenient time allowance for placing, or relief through group counseling. Others seemed to reflect administrative problems—supervision, paper work demands, or just more time and money for evaluation of clients, possibly better coordination of what was already available.

Table 15. Team members:

Placement specialist and counselor	11
Placement specialist, vocational psychologist, medical personnel and home teacher	1
Placement specialist, vocational psychologist, medi- cal personnel and counselor	2
Placement specialist, vocational psychologist, home teacher, and counselor	1
Placement specialist, medical personnel, case- worker and home industries specialist	1
Placement specialist, medical personnel and counselor	2
Placement specialist, medical personnel, psycholo- gist and counselor	1
Placement specialist, medical personnel, super- visor, home teacher, psychologist, and counselor	1
Placement specialist, home teacher and counselor	5
Placement specialist, caseworker, and counselor ..	3
Placement specialist, home teacher, psychiatrist, and counselor	1
Placement specialist, home teacher, agricultural specialist and counselor	1
Placement specialist, caseworker, home industries specialist and counselor	2
Placement specialist, psychologist, counselor	4
Placement specialist, psychologist, psychiatrist and counselor	1
Placement specialist, counselor and supervisor ..	1
Vocational psychologist, and counselor	1
Vocational psychologist, medical personnel, home teacher, and counselor	1
Vocational psychologist, medical personnel, home teacher, caseworker, counselor	1
Medical personnel, and caseworker	1
Medical personnel, caseworker, psychologist, and counselor	1
Medical personnel, psychologist and counselor ..	1
Medical personnel, caseworker, Family Service worker, counselor, supervisor, intake worker ..	1
Caseworker and counselor	1
Home teacher, caseworker and counselor	2
Home teacher, caseworker, counselor, supervisor and intake worker	1
Counselor, caseworker and rehabilitation center staff	1
Medical personnel, vocational psychologist, super- visor, counselor and community resources ...	1

The tabulation here consists of a very long list of combinations making up the various teams. In some cases, the differences may lie more in slight variations in title than in differences in function. Obviously, even if this is true, there is great variation in the team's makeup.

Table 16. Sources of referral:

The following were listed as sources of referral by various counselors. However, many were extremely indefinite, said their clients came from "everywhere."

Self referrals
 Family
 Friends, including other blind persons
 Physicians and ophthalmologists, eye clinics, etc.
 Welfare Department
 Social Security
 Sight Conservation Association, Prevention of Blindness, etc.
 Lions Club
 Ministers
 Disability benefits section
 School teachers or staff
 Employers—business and industry
 United Fund
 Heart Association
 Tuberculosis Association
 Goodwill Industries
 State Employment Service
 American Foundation for the Blind broadcasts

Again, this list results from what happened to come into the memory of the interviewee and is certainly not an exhaustive list.

Table 17. We asked what other specialists the counselors thought were needed.

		%
Placement specialists	48	41.4
Persons with industrial experience, as consultants, not placement workers .	16	13.8
Psychologists	4	3.4
Medical Consultants	11	9.5

We regret that we question the value of this item because we do not know what specialists each interviewee already had available, if any. It does seem clear, however, that the interviewees center their concern on getting placements and this is where they would like help!

Table 18. Freedom in planning work:

		%
Very few restrictions, freedom is one of the satisfying things about the job	97	83.6
Adequate, but some restrictions	18	15.5
No response	1	.9
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Total	116	100.0

Again, we may have responses which are biased by the interviewee's fear that criticism would get back to his superior, but it was remarkable in how many cases answers to this question were given quickly and warmly—they did feel free and wanted us to know that they appreciated this. Some said it was the best quality the job had! Amazingly, not one complained that he was uselessly shackled, although 18 noted some restrictions which they usually accepted as necessary.

Table 19. Supporting assistance:

		%
Secretary, full time	20	17.2
Secretary, part time (shared)	92	79.2
Driver as needed	44	37.9
Reader	19	16.4
Home teacher assistance.....	2	1.7

(Note: Since more than one response was often given to this question, no total is presented)

Nearly all those interviewed had secretarial assistance, usually shared but, for twenty, on a full-time basis. More than a third also had drivers as needed and 16% listed reading as a service provided by the agency. Two noted that they had the assistance of a home teacher as needed, but in view of the large number who listed home teachers as part of the "team", this seems a minimal figure.

Table 20. Effectiveness of this help:

		%
Most effective, excellent	44	37.9
Adequate, some room for improvement	43	37.1
Inadequate, definitely lacking	13	11.2
No information	16	13.8
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Total	116	100.0

About a third felt that the help reported above was completely effective, but about the same number felt that while it was adequate, they could certainly use more! This was especially true in relation to shared secretarial service which did not always get their work done when they wanted it, or could not take time to read for them as needed. However, only 13 felt that the supporting service was definitely inadequate.

Table 21. Travel policy:

How does the counselor feel about the travel policy of the agency?

		%
Lenient enough to allow all necessary travel	56	48.3
Adequate—presents no real problems	45	38.8
Too restricted, unfavorably affects work	13	11.2
Not applicable, no travel required ..	2	1.7
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Total	116	100.0

It is interesting to note that we received the same number of complaints about inadequate travel allowance as about inadequate supporting service—although not from the same people! On the whole, the agency travel policy is not blamed as a source of problems.

Table 22. Supervision:

How does the counselor feel about the supervision he receives?

		%
“Best possible,” very favorable answers	46	39.7
Adequate	58	50.0
Inadequate, negative comments	10	8.6
No information	2	1.7
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Total	116	100.0

Again, we must allow for the fact that we may not have completely frank responses. However, in many, many cases comments came quickly and eagerly stated that the supervisor was “the best.” In the ten cases where answers were highly critical, the criticism related more to the amount of time given by the supervisor to the interviewee than to the quality of whatever supervision was received.

Table 23. Kind of supervision:

		%
Sees supervisor roughly once a month, communicates by phone, memo, etc.	28	24.1
Sees supervisor every one to two weeks	8	6.9
Supervisor in same office, sees as needed	69	59.5
Supervision "in name only"	1	.9
No information	10	8.6
Total	116	100.0

Roughly 60% of those interviewed work out of the same office in which the supervisor functions, see him as necessary. Another 31% are not in the office with the supervisor and see him only once or twice a month, but feel so free to communicate by phone or memo that they appear quite satisfied with the relationship.

Table 24. How does the counselor feel about placing a client at his highest potential?

		%
Place lower if necessary, hope for better later	55	47.4
Try to place at highest initially, pass up lesser jobs	41	35.3
Try for highest within limited opportunities available	9	7.8
Follow client's wishes	9	7.8
No information, not applicable	2	1.7
Total	116	100.0

Nearly half of those interviewed give the practical response that they will place a client below his best potential, often quickly adding that they would hope to find a more suitable placement later. About a third say they would not compromise, would pass up lesser jobs, not even discussing them with the client. Nine express this idealism, but point out the limited opportunities, at least in their areas, so that they do the best they can, but feel it often falls short of what they wish they could do for some clients. Another nine leave the matter to the client on the ground that he knows best his own needs, may wish to take any job rather than be without employment.

Table 25. Placing totally blind:

		%
Sees no difference	38	32.8
Thinks partially sighted easier to place	37	31.9
Thinks totally blind easier to place ..	3	2.6
More difficulty but more satisfaction with totally blind	36	31.0
No information, not applicable	2	1.7
Total	116	100.0

This question, about how the counselor feels about placing totally blind, compared with partially seeing, clients elicited some very thoughtful answers. A third of the interviewees firmly said that they saw no difference; in both cases they had served, in both cases society had a worker in place of a dependent, and in the statistics of the agency there was the same value. Another third readily admit that it is easier to place a partially seeing person, while a final third agree with this but add that the satisfaction of placing a totally blind person is much greater. Thus, the group breaks roughly into three equal parts on this question—with just a couple of people saying that it is easier to place totally blind clients.

Table 26. Work with the family:

		%
Most important to promote complete rehabilitation	59	50.9
Does it only when necessary	35	30.2
Uses family service organization, in addition to working with family himself	8	6.9
Uses family service organization, does not work with family himself	8	6.9
Does not work with family in any sense	5	4.3
No information	1	.9
Total	116	100.1

Half of those interviewed regard the family as an important element in rehabilitation and feel that there should almost always be some contact with them. Some commented that all they try to do with the client may be upset if the family does not understand. On the other hand, 30% contact the family only when they feel it quite necessary, actually fearing some unfavorable influence. Roughly 14% recognize the need for work with some families, but leave it chiefly or entirely to family agencies. They sometimes commented that they believed very strongly in the importance of family contacts, but felt that they did not have the time, or perhaps the training, to handle this themselves.

Table 27. Other agencies with which the counselor works:

Chamber of Commerce	YMCA
Goodwill Industries	Visiting Nurses
County Social Organizations	County hospitals
Family Service	Crippled Children's Society
Governor's Committee for	State Employment Service
Employment of the Handi-	Braille Institute of America
capped	Marriage counselors
Industries for the Blind	Red Cross
Private training schools	Jewish Family Service
Board of Public Assistance	Unemployment Bureau
V.D. Clinic	State Board of Vocational
Urban League	Rehabilitation
Just One Equal Break	United Fund
Child Welfare	Small Business Bureau
Neighborhood House	Jewish Vocational Service
Business Enterprise Program	State Workshops for the Blind
Young Men's Business Club	Rotary Club
Lions Club	Soroptimists
Society for the Blind	TB and Health Association
Hearing Society	Retarded Children's Association
Lighthouse for the Blind	Shelter shops, various
Industrial Home for the Blind	Industrial Education Center
Farm-Home Administration	Industrial Section, Labor
Recreation Commission	Department
Production Credit Assn.	County Extension Service
Cerebral Palsy Center	(Ohio)
Salvation Army	Jewish Community Center
Texas Educational Agency	Abilities Unlimited (Texas)
Community Chest	Credit Bureau
Catholic and Lutheran Charities	Clovernook Home and School
Soil Conservation Service	Greater Pittsburgh Guild
Shut-In Society	Agricultural Agency
Knights Templar Foundation	Philomatheon for Blind

This is a long list, with some names peculiar to certain localities. Probably, with all its length, it is not exhaustive since, again, it depended upon the memories of those interviewed, not records. The chief impression one gets is that counselors have no hesitation in working with almost any agency and do actively cooperate with a great many.

Table 28. What is the greatest satisfaction the counselor finds in his job?

		%
Placing totally blind clients	3	2.6
Making useful citizens out of unemployed people	38	32.8
Helping others	52	44.8
The challenge of placement	16	13.8
Simply doing his job well	6	5.2
Contacts with people through his job.	2	1.7
Relationships with colleagues	1	.9
Financial reward to self and family .	1	.9

(Note: Since several counselors gave more than one of the above, no total is presented.)

Roughly 90% of these answers indicate that the great reward in this profession lies in service, whether measured in terms of society (making useful citizens) or in terms of the individual (helping others). Another 21% list the challenge of a job well done—placing totally blind persons, meeting the problems of placement itself, or the general statement that he enjoys doing his job well. It is surprising how few name the kind of rewards which would be named by large percentages of workers in other jobs, such as contacts with people or financial reward. Again, we see the interviewees as working for rather different reasons than motivate most workers. Of course, it is also possible that financial reward is not named because these jobs are rather poorly paid—it is a good thing the counselor *can* find satisfaction in something else!

Table 29. To what does the counselor attribute his success?

		%
His own sense of social consciousness .	8	6.9
His training and education	14	12.1
Previous work experience	9	7.8
His philosophy of work and life	3	2.6
Ability to relate to clients, understand them	31	26.7
Persistence and hard work	10	8.6
Feels he is a success but not sure why .	23	19.8
No information, or not sure is a success	24	20.7

(Note: Since several counselors gave more than one of the above, no total is presented.)

I have a lot of doubt about the value of this data. Most of the counselors seemed non-plussed by the question, many disclaimed thinking they were successful, and I feel many of the responses were superficial. Yet, it may

be worth noting that the largest category of response—26.7%—is the ability to relate to and understand clients, probably based on the blindness of the counselor in many cases. Thus, the “handicap” becomes in some degree an advantage here.

INTER-RELATIONSHIP OF COUNSELOR CHARACTERISTICS

It was felt that at least some of the characteristics discussed in the preceding section might be related to one or more of four basic factors: (1) the age of the counselor, (2) the amount of vision of the counselor, (3) the education of the counselor, and (4) the number of placements per year reported by the counselor. In fact, when the tabulations were made and transposed into percentages, very few relationships of any significance were found. However, the following appear worth reporting with some brief discussion:

A-1. Counselor's age related to how he obtained his job.

<i>How job was obtained</i>	<i>Under 40 years of age</i>		<i>40 years and over</i>	
Applied on own initiative	37	63.8%	30	51.7%
His own counselor recommended it	7	12.1%	3	5.2%
Agency approached him	10	17.2%	16	27.6%
Promotion	1	1.7%		
Transfer from another agency job	2	3.5%	5	8.6%
Friend or family recommended	1	1.7%	3	5.2%
No information			1	1.7%

Although these differences are not statistically significant, the interesting trend suggested by the above tabulation is that more of the younger counselors seem to have entered this work on their own initiative; apparently they have chosen rehabilitation as a career, prepared for it, and then sought employment, as one would expect to occur in most fields of work. By contrast, a similar larger percentage of the older counselors got into this work because the agency liked what they did in some other field—industry, vending, etc.—and offered them the rehabilitation job. This suggests that they are not “professionals”. However, almost exactly half of them, also, came on their own.

A-2. Counselor's age related to number of placements per year.

<i>Number of Placements</i>	<i>Under 40 years of age</i>		<i>40 years and over</i>	
Up to and including 20	37	63.8%	35	60.3%
21 or more	21	36.2%	23	39.7%

The interesting thing about the above tabulation is that age has absolutely nothing to do with number of placements made!

There is, of course, an inevitable relationship between the age of the counselor and the number of years in work for the blind, but it seems pointless to tabulate anything so obvious.

This means that none of the relationships with the age of the counselor show significance.

V-1. Amount of vision related to amount of education.

<i>Amount of education</i>	<i>Able to do some reading including normal vision</i>		<i>No reading of ink print</i>	
High school only, or high school plus occasional courses	6	11.3%	8	12.7%
Bachelor's degree, or bachelor's degree plus occasional courses . .	31	58.5%	29	46.0%
Master's degree or more	16	30.2%	26	41.3%

Again the differences are not statistically significant although the trend suggests less tendency to go on to a master's degree or more when the individual has partial vision.

V-2. Amount of vision related to previous work experience.

<i>Previous work experience</i>	<i>Able to do some reading including normal vision</i>		<i>No reading of ink print</i>	
Clerical	2	3.0%	4	4.6%
Industrial	13	19.4%	30	34.5%
Professional	34	50.8%	24	27.6%
Sales	10	15.0%	15	17.2%
Armed Services only			3	3.4%
Agriculture	5	7.5%	1	1.2%
Owned business	1	1.5%		
None	2	3.0%	8	9.2%

The above tabulation shows some tendency for those with less vision to have had only industrial experience, while those with reading vision had professional experience. However, this may be weighted with counselors with normal vision who rarely came into this work unless they had been in some other form of professional work, such as teaching, social work, etc. Those with no vision problem had the following previous experience: clerical 1, industrial 9, professional 24, sales 5, agriculture 3, owned own business 1, no experience 1.

V-3. Amount of vision related to willingness to place a client below top potential.

<i>Attitude</i>	<i>Able to do some reading including normal vision</i>		<i>No reading of ink print</i>	
Place lower if necessary	24	45.3%	39	61.9%
Place at highest only	18	34.0%	23	36.5%
Follow wishes of client	9	17.0%	1	1.6%
No information	2	3.8%		

Although the differences shown in Tabulation V-3 are not statistically significant, there is what seems to be a practicality in counselors with less vision which causes them to place the client below his highest potential somewhat more frequently. Yet about the same number in both vision groups say they insist upon placement at or close to the highest potential, so it is not that those with less vision are less idealistic. Rather, the difference appears in the considerably larger percentage of those with vision who say that they would ask the client and follow his wishes; only one of the counselors with low vision says this. This might lead to an interesting interpretation—that the blind counselor feels freer to make up the mind of the blind client, as it were, than does the counselor with some vision. Pure speculation, of course!

Naturally there is a relationship between amount of vision and the statement that the individual's own blindness is the reason he is in this work. There seems to be no point in tabulating this obvious and inevitable relationship.

No other relationships with amount of vision are even worth comment.

E-1. Education related to previous work experience.

<i>Previous work experience</i>	<i>High School Level</i>		<i>Bachelor's Level</i>		<i>Master's Plus</i>	
Clerical	1	5.3%	3	3.5%	2	4.3%
Industrial	9	47.4%	24	27.9%	10	21.3%
Professional	2	10.4%	34	39.5%	21	44.7%
Sales	6	31.6%	14	16.3%	6	12.8%
Armed Services			1	1.2%	1	2.1%
Agriculture	1	5.3%	4	4.7%	1	2.1%
Owned business . . .			1	1.2%		
None			5	5.8%	6	12.8%

The only trends worth comment are that those with only high school background tend to have had, as previous experience, industrial or sales work; while those with college background are more likely to have had professional experience. There is an inevitable cause and effect relationship here which has very little to do with blindness—there simply are not many "professional" jobs available to people without college.

E-2. Education related to how counselor obtained his job.

<i>How job was obtained</i>	<i>High School Level</i>		<i>Bachelor's Level</i>		<i>Master's Plus</i>	
Applied on own initiative	6	42.9%	36	60.0%	28	66.7%
Own counselor recommended . . .	1	7.1%	5	8.3%	3	7.1%
Agency approached him	5	35.7%	14	23.3%	3	7.1%
Promotion			1	1.7%	2	4.8%
Transfer from other agency job			2	3.3%	6	14.3%
Friend or family recommended	2	14.3%	1	1.7%		
No information			1	1.7%		

In tabulation E-2 we see that it is more likely that those who come into the work on their own initiative will have at least college and two-thirds of them have master's degrees or more. On the other hand, those who come into the work because the agency has sought them out, tend to be people with less formal education—obviously, pleasant and successful people who have attracted attention in non-professional fields.

E-3. Education related to number of placements per year.

<i>Amount of education</i>	<i>20 or less placements</i>		<i>21 or more placements</i>	
High school level	7	50.0%	7	50.0%
Bachelor's degree level	42	68.9%	19	31.1%
Master's or more	22	53.7%	19	46.3%

Although tabulation E-3 seems to show that those in the Bachelor's level group are less likely to make a high number of placements, I think this is pretty much a chance result and, especially in view of the fact that we have no proof of accurate information on placements I doubt if any issue should be made of it. It is indeed an interesting question—whether there is a relationship between education and number of placements—but one would need much more accurate data than I feel we have to prove anything.

A tabulation of education related to other specialized training showed that those with college, and especially those with graduate training, had had many more courses in counseling and social casework than had those with only high school, but again this seems too inevitable to be worth making an issue of it.

No other significant relationships with education were found.

P-1. Previous work experience related to number of placements per year.

<i>Previous work experience</i>	<i>20 or less placements</i>		<i>21 or more placements</i>	
Clerical	3	4.2%	3	6.8%
Industrial	24	33.3%	19	43.2%
Professional	40	55.6%	18	40.9%
Sales	14	19.4%	11	25.0%
Armed Services			2	4.6%
Agriculture	5	6.9%		
Owned business			1	2.3%
None	6	8.3%	3	6.8%

There is nothing really significant here but there is an interesting trend showing that professional background does not relate to a high number of placements. However, as noted before, I have too much doubt about the accuracy of the placement figures to make much point of this. Also, when the counselor worked as the placement man on a team, he might be claiming credit for placement when much of the work was done by other team members. It is possible that people with professional background are more likely to work all the way through with the client, i.e., more likely to have the casework skills, counseling skills, etc. to be able to work all the way through.

P-2. Placements per year related to types of placement training.

<i>Type of training</i>	<i>20 or less placements</i>		<i>21 or more placements</i>	
Carbondale	24	33.3%	17	38.6%
VRA courses	24	33.3%	17	38.6%
State agency courses	19	26.4%	10	22.7%
Graduate school courses .	15	20.8%	9	20.5%
On-the-job training	3	4.2%	2	4.6%

Tabulation P-2 is presented only to show how amazingly little relationship there is between type of training and placements. If the data on placements are anywhere nearly correct, none of these types of training can be proven a success on the basis of counting placements.

A similar total lack of significant relationships is found between number of placements and other types of specialized training, such as home teacher training, counseling and social work, machine shop, etc.

P-3. Placements per year related to counselor's attitude regarding placing the client at his highest potential.

<i>Attitude</i>	<i>20 or less placements</i>		<i>21 or more placements</i>	
Place lower if necessary .	29	40.3%	26	59.1%
Place at highest only	32	44.4%	11	25.0%
Follow wishes of client ..	5	6.9%	4	9.1%

Here we have the only relationship in all this data which even approaches significance (T-2.0), other than those which are by the nature of the factors inevitable. Tabulation P-3 does seem to tell us that the workers who make the high numbers of placements are practical and do not wait to place the client at highest potential. Perhaps this is best left without comment!

At this point our readers may permit one or two pertinent observations. It is interesting to note the response to the question concerning job demonstrations in their relationship to placement. We would agree that a counselor incompetent in job demonstration, would find them not only useless, but in most instances, disastrous, but if a counselor is to do placement, how can he reasonably be expected to make good sound sales unless he is equipped to demonstrate the value, the capability and the efficiency of his product to the customer? Are we saying that without the use of job demonstrations, we are securing employment in the competitive labor market on sympathy?

It would be interesting to examine the actual records and to travel with these opponents of demonstration, to determine how many opportunities they missed because this skill was lacking in their sales kit.

Let us re-emphasize that placement, the ultimate goal, is dependent upon the selling skill of the counselor. Job demonstrations, like all other tools in his sales kit, are valuable when he, the salesman, knows how to use them, when to use them and in what manner to use them. You do not anticipate encountering every objection cited in the previous chapter when interviewing an employer, but it is well to know the answers in the event any one or more of those objections are raised in some form. Thus it is equally important when evaluating and selecting jobs which can be done without sight for the counselor to have some skill in demonstration as an added insurance for the sale. No counselor can be expert on every piece of equipment and the employer does not expect him to be. The sole objective of the job demonstration is:

First, to give the counselor every opportunity to examine the flow of work into the job, through the job and away from the job and to determine that it can be done without sight.

Second, it indicates to the employer (the customer) the feasibility of using a sightless person at that particular work station.

Finally, to do the job of placement, the counselor and his superior must take advantage of every staff training opportunity, recognizing that not everyone will meet the particular need, yet from each will come new ideas, new trends of thought and, hopefully, new methods to do a better job on behalf of the client. The counselors who entered the field 15 or 20 years ago, and who are still carrying a caseload, have undergone mighty changes, perhaps unwittingly and in some cases unwillingly, but the new concepts of rehabilitation and the demands of the labor market of today, have required that they do so. The newcomers to the field have had the advantage of advanced degree programming, continued in-service training, specialized

training and should be better prepared to meet the challenges which lay ahead. This may require re-education of supervision and administration and at this point the counselor's job may well be a lonely one, but if he maintains his integrity, analyzes all factors, plans with his client and manages his personal time well he will be a producer.

Chapter IV

ANALYSIS OF EMPLOYER INTERVIEWS

As part of the study of blind workers in clerical, industrial and service jobs a number of employers of the blind workers were interviewed. The major purpose of these interviews was to sample the attitudes of employers toward blind workers. We also checked whether the employer approved the job description given by the blind worker, and asked about his general relationship with the agency which placed that worker.

All persons interviewed in this study were referred to us by the state (or in a very few cases, the private) agencies. In other words, we talked only with employers to whom the agency wanted us to talk; inevitably, this means that we talked only with employers the agency felt favored blind workers and the agency itself. We talked to employers who might be called friends of the agency.

This automatically means that we could not have a real sampling of employers of blind workers, and there could be some argument that this fact alone makes the whole study of employer interviews valueless.

Some evidence that the above is true can be found in the fact that, out of 236 employer responses, only one stated that relationships with the agency had been poor, while 143 rated the agency relationship definitely superior. This is simply not realistic. One could not expect so high a percentage of praise for any person or organization in a standard sampling.

Our comments concerning the bias with which employers were chosen for interview is definitely *not* intended as a criticism of the agencies with whom we worked. We would merely like to state our attitude toward this for the benefit of those who might plan similar research in the future:

(1) The employers interviewed were a kind of reference for the agencies, a check upon them. It is natural for any person or organization to give, as references, persons who will speak well, not ill. Anyone with the slightest understanding of human nature should expect this.

(2) There are undoubtedly certain cases where a blind person is at work but not really well accepted, perhaps not really successful, therefore not secure in his job. It is all too possible that were the employer asked to give time for an interview this could tip the balance against such a worker; in other words, as a result of being asked for an interview the employer might decide to let the worker go. This would mean that our research caused the blind person to lose his job. None of us could possibly wish this to occur and therefore all would agree that it would be unwise to include such employers in the group to be interviewed. Yet obviously it is just such employers who might give very valuable critical comments about blind workers.

(3) Employers who have refused to consider blind workers and, in this sense, do not have a good relationship with the state agency, do not have enough interest in placement of the blind to be interviewed reliably at all. We actually tried to do several such interviews, making the contacts on a personal basis in the Philadelphia area, but the results were quite unsatisfactory. Such employers just do not want to be bothered. What statements they make are very brief, and often appear to be the result of little real thought. Again, such replies are worthless.

COMMENTS ON THE DISTRIBUTION OF EMPLOYER RESPONSES

A total of 236 sets of employer responses was analyzed. These responses were made by employers in the following types of businesses:

	<i>Number</i>	<i>Percentage</i>
Manufacturing	100	42%
Sales and distribution	9	4%
Communication (newspaper, radio, TV)	6	3%
Medical (hospital, health club, etc.) ..	58	25%
Service	29	12%
Educational, religious, social service .	7	3%
Insurance, banking	5	2%
Government (local, state, federal) ...	21	9%
Unclassified	1	.4%

The job titles of the persons interviewed were:

	<i>Number</i>	<i>Percentage</i>
Immediate supervisor	126	53%
Personnel department staff	58	25%
Owner or president	15	6%
Plant Manager	20	8%
Safety Director	7	3%
Combinations of above or unclassified	10	5%

It will be noted that more than half of the employer representatives were the immediate supervisors of the blind worker. We regarded this as the most desirable person to interview since he was most likely to have real observations upon which to base his comments. The following tabulations will show that in a number of cases we have had to code an interview as giving no information on certain points. This was usually because the person interviewed was not in a position to know the answer to that question. For example, the blind employee might have been placed on his job long before this supervisor was in the department so that there was no information about length of training time, early reactions to the job, etc. or the supervisor, or personnel staff, might not know how long the company had been acquainted with the agency.

In order to use statistical treatment, the informant's evaluation of the blind worker's previous training for the job was placed in one of three categories:

	<i>Number</i>	<i>Percentage</i>
Adequate	75	32%
Could have been better	10	4%
None—only on-the-job training	95	40%
No information available	56	24%

This shows that the informant had an unfavorable opinion concerning the previous training in only 10 cases; however, 40% of the employees had had no prior training related to the job.

The informant's opinion of the blind worker's success in on-the-job training shows that in only 11 cases was success poor or serious problems presented:

	<i>Number</i>	<i>Percentage</i>
Superior to sighted	16	7%
Same as sighted—good, average	80	34%
Excellent (no stated comparison with sighted)	62	26%
Needed special help and/or training.	8	3%
Inferior because blind	1	4%
Inferior but not because blind	2	1%
Supervisor not there at time, no information	65	28%
Received no on-the-job training	2	1%

Employers were also asked to evaluate the blind worker's speed in learning his job. This could, of course, be pretty much the same as "success" since speed would certainly be part of success. However, it turns out that 27 workers were described as slow in learning although it was felt that this was not always because of blindness. In contrast with this 11% who were described as slow, another 7% were described as faster than sighted workers in learning while another 45% were described as learning about as fast as sighted workers did or simply as learning normally.

	<i>Number</i>	<i>Percentage</i>
Faster than sighted	17	7%
Same as sighted	55	23%
Learned quickly and readily (not compared with sighted by supervisor)	53	22%
Slower than sighted because blind ..	22	9%
Slower than sighted but not because blind	5	2%
Supervisor not there at time, no information	81	35%
No on-the-job training	3	1%

Interviewees were asked what concessions had been made for the blind worker or what changes had to be made in the job so that he could do it. In 55% of the cases, no change was made, no concessions were given.

	<i>Number</i>	<i>Percentage</i>
None	129	55%
Special tools and/or machines	18	8%
Special safety considerations	9	4%
Assistance given in work	18	8%
Guide provided in plant	8	3%
Not allowed to do certain parts of job	17	7%
Special tool, but not because of blindness	3	1%
Miscellaneous, combinations of above	28	12%
No information available	16	7%

Interviewees were asked to evaluate the blind worker's job performance. Of these replies, 88% show superior or completely satisfactory performance while another 2% were "as good as anyone else," and 3% were slower but did work of superior quality. This is, of course, a very favorable picture but we must again remind the reader that we fear we were not referred to employers who were likely to have unfavorable opinions.

	<i>Number</i>	<i>Percentage</i>
Superior, excellent, better than sighted	131	55%
Satisfactory	78	33%
"As good as anyone else"	5	2%
Slower but quality superior	6	3%
Unsatisfactory	2	1%
Generally slower than sighted workers	8	3%
No information	6	3%

Informants were asked to evaluate the relationship between the blind worker and his fellow employees. In 79% of the cases this relationship was regarded as satisfactory and in another 8% it was said that the blind worker's presence had boosted morale. There were, however, a few reports of overprotection on the part of fellows, or personality problems:

	<i>Number</i>	<i>Percentage</i>
Boosted morale	20	8%
No problems	187	79%
Employees feel sorry, overprotect	4	2%
Personality problems at first	8	3%
Personality problems still present	7	3%
Not applicable, no other employees	3	1%
No information available	7	3%

Interviewees were asked how the blind employee came into the company. For 68% the contact was made by the state agency, for 2% by a private agency, for 1% by a school for the blind. Only 5% had previously been employees of the company:

	<i>Number</i>	<i>Percentage</i>
State agency	160	68%
Private agency	4	2%
Personal application	8	3%
Civic group	1	4%
Family, friend	6	3%
Already an employee (hired as sighted) ...	12	5%
Personally known to supervisor	4	2%
School for the blind	2	1%

An attempt was made to evaluate how long there had been some relationship between that company and the agency, but this is quite indefinite because in 45% of the cases the informant did not know this data. Even when a definite answer was given, it may be inaccurate since it is based on no records. About all we could be sure of was that if the agency placed the worker under discussion, the agency and company had known each other at least as long as that worker was in the employ of the company. In at least 25% of the cases, the agency and company seem to have worked together for five or more years.

The informant was also asked for his opinion of the agency-company relationship. In only four cases was there any indication that this relationship could have been improved but, as we have repeatedly commented, this group of employers was certainly selected for friendship with the agency and cannot be regarded as representative of all potential employers.

The interviewee was asked for his personal opinion (not necessarily an official company opinion) of blind people as workers. For 60% these answers are definitely favorable, for only 2% unfavorable. In other cases, answers were generally favorable but qualified:

	<i>Number</i>	<i>Percentage</i>
Superior to sighted (in this job)	79	33%
Same as sighted	64	27%
Inferior to or slower than sighted	4	2%
OK but few jobs could hold	33	14%
OK if properly trained and placed	38	16%
OK if well adjusted, good personality	3	1%
OK with sighted supervision	3	1%
Willing to do job sighted will not	12	5%
No information	21	9%

The informant was asked whether he would favor replacing this blind worker (if he left) with another blind person. To this 76% of the answers were favorable:

	<i>Number</i>	<i>Percentage</i>
Yes—sight not factor in hiring	135	57%
No	10	4%
Depends on amount of vision	17	7%
Depends on amount of training, skill	14	6%
Would “consider” others	46	19%
No information	14	6%

Finally, the interviewee was asked to list factors he felt limited hiring of blind workers. Only about 20% indicated limiting factors, with lack of versatility (21—9%) and safety factors (15—6%) most frequently named. Again we feel this is worth little, answers were given too casually and were not official company opinions.

COMMENTS ON RELATIONSHIPS BETWEEN RESPONSES

Table 1. Relationship between previous training of the blind employee and his success in on-the-job training.

	<i>Success in O-J-T</i>		<i>Percentages of Columns Down</i>		<i>Percentages of Rows Across</i>		
	<i>Good</i>	<i>Some Problems</i>					
Previous training:							
Adequate	57	1	41.9	10.0	98.3	1.7	100%
Could have been better	5	2	3.7	20.0	71.4	28.6	100%
None	74	7	54.4	70.0	91.4	8.6	100%
Totals	136	10	100%	100%			

This shows that in only 10 of 146 employees were problems in O-J-T reported; the fact that 70% of those who had problems were people who had had no prior training related to the job might seem a forceful argument for prior training—except that the total of ten for whom problems were reported is statistically insignificant. If one were going to argue on the basis of these percentages, one would also have to say that since only 41.9% of those who were rated good in O-J-T were reported as having adequate prior training, while 54.4% of those rated good had had no prior training, we have an argument against prior training!

Reading the percentages across the rows brings us to a similar impasse. Although 98.3% of those with adequate prior training and 91.4% of those with no prior training were rated as having good success in O-J-T, only 71.4% of those with some (but inadequate) prior training were so rated. Better to have had none at all than not have had enough!

Another element which contributes to the meaninglessness of this table is the fact that we do not know what kind of prior training is being rated, nor for what job. For some of the jobs in the study there would be well

organized formal training available, as for certain shop jobs; for others there might be none and no seeing person would have had prior training either.

Without much more nearly equalizing these variables, our data cannot be subjected to statistical treatment.

Table 2. Relationship between previous training and speed in learning the job.

	<i>Speed in Learning Job</i>			<i>Percentage of Columns Down</i>			<i>Percentage of Rows Across</i>			
	<i>Su-</i>	<i>Aver-</i>	<i>Slow</i>							
Previous training:	<i>prior</i>	<i>age</i>								
Adequate ...	2	38	4	13.3	40.9	19.1	4.5	86.4	9.1	100%
Could have been better	2	4	3	13.3	4.3	14.3	22.2	44.4	33.3	99.9%
None	11	51	14	73.3	54.8	66.6	14.5	67.1	18.4	100%
Totals	15	93	21	99.9%	100%	100%				

The same comments apply here as to Table 1. Of those who were rated superior in speed of learning 73.3% had had no previous training, while equal numbers (13.3%) were rated as having had adequate and "could have been better" prior training. When we consider the much larger group who were rated average in speed of learning the contrast is less marked, but even here 40.9% had adequate prior training while 54.8% had none at all. This is nothing short of silly, but the explanation undoubtedly lies in the very different kinds of jobs in which these people had been placed. Yet if we try to do this by job title, we have, in many cases, only one person in that job—and therefore we have no comparison at all!

Table 3. Relationship between previous training and ratings of job performance.

	<i>Job Performance</i>			<i>Percentage of Columns Down</i>			<i>Percentage of Rows Across</i>			
	<i>Su-</i>	<i>Aver-</i>	<i>Satis-</i>							
Previous Training:	<i>prior</i>	<i>age</i>	<i>fac-</i>							
Adequate ...	46	24	4	43.0	40.7	36.4	62.2	32.4	5.4	100%
Poor	3	5	1	2.8	8.5	9.1	33.3	55.5	11.1	99.9%
None	58	30	6	54.2	50.8	54.5	61.7	31.9	6.4	100%
Totals	107	59	11	100%	100%	100%				

Same proportions and same comments as above. There is certainly no clear relationship shown between poor previous training and poor job performance.

Table 4. Relationship between a broad rating of success in on-the-job training and a rating of speed in learning the job.

	<i>Success in O-J-T</i>			<i>Percentage</i>			<i>Percentage</i>			
	<i>Superior</i>	<i>Average</i>	<i>Inferior</i>	<i>of Columns Down</i>			<i>of Rows Across</i>			
Speed in learning job:										
Faster	13	3	1	20.3	4.4	12.5	76.5	17.6	5.9	100%
Average	48	53	1	75.0	77.9	12.5	47.1	51.9	1.0	100%
Slow	3	12	6	4.7	17.7	75.0	14.3	57.1	28.6	100%
Totals	64	68	8	100%	100%	100%				

Here we do have some mildly positive relationships. For those rated as faster than the seeing in learning the job, 76.5% were also rated as superior in O-J-T. However, 57.1% of those rated slow in learning were, in the overall O-J-T rating placed in the average group. Of those rated inferior in O-J-T, 75% were also rated as slow learners. Thus there is some connection between ratings of speed and of general O-J-T success but the raters were not talking about exactly the same thing on these two questions.

Table 5. Relationship between ratings of success in on-the-job training and special concessions or changes made in the job for the blind worker.

	<i>Special Concessions or Changes</i>		<i>Percentage</i>		<i>Percentage</i>	
	<i>None</i>	<i>All Others</i>	<i>of Columns Down</i>		<i>of Rows Across</i>	
Success in O-J-T						
Average	43	24	47.8	44.4	64.2	100%
Superior	42	24	46.6	44.4	63.6	100%
Inferior	5	6	5.6	11.2	45.5	100%
Totals	90	54	100%	100%		

It would appear that two out of three of the people rated either superior or average in O-J-T are people for whom no changes had to be made in the job or the way it was done. On the other hand, slightly more than half of those rated inferior in O-J-T needed such concessions. This would be a significant difference were it not for the fact that the total number rated inferior is so extremely small.

Table 6. Relationship between ratings of job performance and concessions or changes made in the job for the blind worker.

Job	<i>Special Concessions or Changes</i>			<i>Percentage</i>		<i>Percentage</i>	
	<i>All</i>		<i>Percentage of Columns Down</i>	<i>Percentage of Rows Across</i>			
	<i>None</i>	<i>Others</i>					
performance:							
Superior	77	39	60.6	55.7	66.4	33.6	100%
Satisfactory .	45	23	35.4	32.9	66.2	33.8	100%
Unsatisfactory	5	8	3.9	11.4	38.5	61.5	100%
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
Totals	127	70	99.9%	100%			

This is very similar to the preceding table. Two out of three of those rated superior or satisfactory needed no concessions, while two out of three of those rated unsatisfactory did need such concessions. This is a suggestive trend and would be statistically significant if the very small size of the unsatisfactory group did not raise doubts about its meaning.

Table 7. Relationship between ratings of job performance and ratings of relationships with fellow employees.

Relation to fellow employees:	<i>Job Performance</i>			<i>Percentage</i>			<i>Percentage</i>			
	<i>Su-</i>	<i>Satisfac-</i>	<i>Poor</i>	<i>of Columns</i>	<i>Down</i>	<i>of Rows</i>	<i>Across</i>			
	<i>prior</i>	<i>tory</i>								
Good	119	72	12	94.4	90.0	85.7	58.6	35.5	5.9	100%
Poor	7	8	2	5.6	10.0	14.3	41.2	47.1	11.7	100%
	—	—	—	—	—	—	—	—	—	—
Totals	126	80	14	100%	100%	100%				

Only 17 persons, or slightly less than 8%, were regarded as having poor relationships with fellow employees. However, only 11.7% of these are regarded as poor in job performance while the others are about equally divided between the group rated superior and the group rated satisfactory in job performance. There does not appear to be any relationship here—nor any halo effect. The employer does not tend to rate workers as poor in inter-personal relationships because of poor job performance; in fact, it is probable that the blind worker generally has to do pretty well in his job to be retained in the face of the fact that he has problems in relating to his fellows.

Table 8. Relationship between ratings of job performance and the employer's opinion of blind people as workers.
Employer Interview

Job Performance	Blind as Workers				Qualifications		Percentage of Columns Down		Percentage of Rows Across				
	Superior	Same	Inferior	Question-able									
Superior	78	28	—	40	86.7	44.4	—	53.3	53.4	19.3	—	27.3	100%
Satisfactory	9	32	—	29	10.0	50.8	—	38.7	12.9	45.7	—	41.4	100%
Unsatisfactory	3	3	4	6	3.3	4.8	100.0	8.0	18.75	18.75	25.0	37.5	100%
Totals	90	63	4	75	100%	100%	100%	100%					

Here we do find pretty clear relationships. Employers who rate blind workers as superior rate their own blind employees as superior in 86.7% of the cases. Employers who rate blind workers generally as the same as seeing workers, scatter between superior and average ratings for their present blind employees. But all of the (4) employers who rate blind people in general as poor employees rate their present blind employees unsatisfactory.

Perhaps we should be encouraged by the fact that this picture does not reverse completely; i.e., although 16 present workers are rated unsatisfactory, only four, or 25% of their employers have generalized to say that all blind workers must be inferior. Six of their employers think that, in the proper job or with suitable training, etc. (that is, with some qualification) blind people might make good employees. Another six think blind people usually could be superior or at least as good as seeing workers and do not generalize from their present unfortunate experience to condemn all blind persons.

Table 9. Relationship between ratings of job performance and willingness of the employer to replace the present blind worker with another.

	<i>Job Performance</i>			<i>Percentage</i>			<i>Percentage</i>			
	<i>Superior</i>	<i>Satisfactory</i>	<i>Unsatisfactory</i>	<i>of Columns Down</i>			<i>of Rows Across</i>			
Would replace:										
Yes	89	41	2	69.5	54.7	14.3	67.4	31.1	1.5	100%
No	5	3	2	3.9	4.0	14.3	50.0	30.0	20.0	100%
Questionable .	34	31	10	26.6	41.3	71.4	45.3	41.3	13.3	99.9%
Totals	128	75	14	100%	100%	100%				

Even though the very small number of workers rated unsatisfactory raises doubts concerning statistical treatment, this is still a rather interesting set of percentages.

Where the present blind worker is rated superior, 69.5% of the employers would replace him with another blind worker, but 3.9% would not and 26.6% would make certain qualifications. One swallow does not make a summer!

Where the present blind worker is rated merely satisfactory, 54.7% of employers would replace with another blind worker but 41.3% suggest qualifications.

Where the present blind worker is unsatisfactory, 14.3% of employers would not accept another blind person and 71.4% raise qualifying barriers.

EMPLOYER ATTITUDES SUMMARIZED

In the above sections we have tried to summarize and quantify employer responses to specific questions. In addition, comments, sometimes part of one response and sometimes part of another, suggest trends in employer thinking—trends which may be more reliable indicators than direct questions can reach.

Although they do not always express it in the following words, the employers we interviewed feel about blind workers as follows:

	<i>Number</i>	<i>Percentage</i>
Must have large volume of work to keep blind busy, as not easily shifted to other work. Most feel blind lack versatility ...	75	31.8%
Feel blind waste less time, stay in work area, mind own business, are punctual, low rate of absenteeism	48	20.3%
Generally, feel that blind perform most efficiently in repetitive jobs	30	12.7%
Feel that blind value jobs more than sighted, are more grateful	24	10.2%

Many hire for economic reasons (do not pay them as much in some cases, are not part of seniority systems, blind produce more, etc.)	22	9.3%
Some seem to run into more problems regarding personality, emotions, etc., with blind than with sighted employees	22	9.3%
Many feel visually handicapped should be kept in fixed location	15	6.4%
Boost morale—make sighted feel guilty when they see blind producing more, therefore, often, overall production rises	14	5.9%
Have found blind will take and stay in jobs that sighted will not. Hire to eliminate large labor turnover	9	3.8%

Chapter V

CHARACTERISTICS OF BLIND WORKERS IN CLERICAL, INDUSTRIAL AND SERVICE JOBS

The major purpose of the project reported in this volume was to collect descriptions of jobs done by blind workers in clerical, industrial and service fields; these are presented in Part II. However, as we interviewed the 752 people who made up our sample, representing all sections of United States, we also asked them some questions about themselves, their background and their attitudes. Complete details of this descriptive material may be found in the Appendix. Their responses were coded and this material was subjected to electronic data processing. By this method, we studied possible relationships between answers to questions under the following headings:

Identification:

- Sex
- Age

General job information:

- Type of employing organization
- Time spent on main and secondary duties
- Tools and machines used, and records kept
- Help used on the job, and source of that help
- Decisions made on the job
- Responsibility for other employees, if any
- Public contacts on the job
- Responsibility for money on the job, if any
- Nature of supervision received and their feelings about it
- How their work is checked and their efficiency measured
- Any adaptations required in the work space due to blindness
- How they obtained the job and were trained for it
- Period required to learn, and problems in learning
- Union relationships
- How wages and opportunities are affected by blindness
- How long they have been on the job and with the company
- Previous employment history

Visual information:

Amount of vision at present, and how long they had this amount
Age of visual loss, and whether sudden or gradual
Effects of blindness as they evaluate them

Travel habits:

Amount of travel required by job
Travel other than on the job
Mode of travel
Any travel training

Educational information:

Amount of education
Whether in school for the blind or regular classes

Family data:

Marital status
Number of children or other responsibilities carried
With whom they live

Recreation:

Participation in groups
Contacts with fellow workers off the job
Hobbies and other recreation

As might be expected, a very large number of the inter-relationships had no statistical significance whatever. This raw data can be made available to serious students who may wish to pursue the possibilities further while we report here only those trends promising at least some significance plus a few where relationships might, logically, be expected but are surprisingly absent.

DESCRIPTION OF THE EMPLOYEE GROUP

First we will present the simple descriptive statistics for the group, shown separately for the 574 men (76.8% of the total group) and 173 women (23.2% of the total group). It may be well to point out here that totals vary slightly from one section of this report to another because missing data often forced us to drop a few individuals from certain tables.

TABLE 1

Age of Workers

<i>Age</i>	<i>Male</i>	<i>Female</i>	<i>Total</i>	<i>% of Rows</i>			<i>% of Columns</i>		
				<i>M</i>	<i>F</i>	<i>T</i>	<i>M</i>	<i>F</i>	<i>T</i>
To age 29 .	123	56	179	68.7	31.3	100	21.4	32.4	23.9
30 to 39 ..	152	38	190	80.0	20.0	100	26.5	22.0	25.5
40 to 49 ..	170	46	216	78.7	21.3	100	29.6	26.6	28.9
50 years+ .	129	33	162	79.6	20.4	100	22.5	19.0	21.7
Total ...	574	173	747	76.8	23.2	100	100	100	100

It is interesting to note that the percentages of men and women in this study are very close to those in the study of blind professional workers.¹

It is also noteworthy that there is a small tendency for women to be concentrated in the youngest age group, probably dropping out thereafter for marriage and home duties. On the other hand, the largest percentage of male workers falls in the 40-49 age group. It is unlikely that this means 40-49 is the best age at which to look for a job if you are a blind man; rather, this probably reflects the increasing number of blind men at higher ages, yet short of an age where the individual does not again seek employment if he loses his vision.

TABLE 2

Number of Men and Women in Each Type of Employing Organization

<i>Type of Organization</i>	<i>Men</i>	<i>Women</i>	<i>Total</i>	<i>Men</i>	<i>Women</i>	<i>Total</i>
Self-employed	53	10	63	9.2%	5.7%	8.4%
Manufacturing	224	28	252	38.9%	16.0%	33.6%
Sales, distribution	56	6	62	9.7%	3.4%	8.3%
Communications	8	4	12	1.4%	2.3%	1.6%
Medical services	72	42	114	12.5%	24.1%	15.2%
Service	71	25	97	12.3%	14.4%	12.9%
Education, religious & social service	26	7	33	4.5%	4.0%	4.4%
Insurance, banking . . .	1	9	10	.2%	5.2%	1.3%
Government	56	38	94	9.7%	21.8%	12.5%
Sheltered	9	5	14	1.6%	2.9%	1.7%
Total	576	174	750	100.0%	99.8%	99.9%

¹Bauman, M. K. Characteristics of blind and visually handicapped people in professional, sales, and managerial work. Harrisburg, Pa. Pennsylvania Office for the Blind, 1963.

A significantly larger percentage of the men find employment in various types of manufacturing organizations. There is no equal concentration of women in any one field, but they are most likely to be found in medical service organizations or in some aspect of government.

Exactly 50% of the women report that they use no tools in their work, while only 28% of the men so report. Only 69 men and 30 women reported the use of tools specially made or adapted for them because of their visual problems. The great majority of workers (87.8% of the men and 82.8% of the women) perform just as do seeing workers in the same job, i.e., with the usual tools for the job or entirely without tools.

With the term "machine" interpreted to include such equipment as typewriters, we find that 28.8% of men and 26.4% of women say that they use no machine on the job, while only 23 men and 11 women say that they use machines which have, in some sense, been specially adapted to meet their visual needs. This means that, from the point of view of use of machines, 95.8% of the men and 93.7% of the women work just as their seeing counterparts on these jobs do—i.e., either with standard machines or none.

Slightly more than half of the women (51.2%) keep some form of records as part of their jobs, but only 38.7% of the men do so. This is a statistically significant difference, but these figures are materially affected by the fact that most of the transcriptionists and similar office workers are women.

Slightly more than half of all those interviewed, 53.2% of the men and 55.2% of the women, report that they receive some help in relation to their jobs. The nature and extent of this help is indicated in the job descriptions. This help is almost always given voluntarily by fellow workers, not paid for by either the worker or the employer.

Most of these workers do not function at a level where important decisions are part of the job, but the men are just a little more likely to have responsibility for such decisions than are the women (25.2% of the men, 17.9% of the women). Somewhat related to these findings is the fact that 15.8% of the men have either some supervisory responsibility or some union responsibility, while this is true for only 7.0% of the women; and 16.1% of the men have some responsibility for money, while this is true of only 7.0% of the women. Women, on the other hand, are more likely to have public contacts (38.6% of the women vs. 29.8% of the men).

Very few of those interviewed (2.5% of the men and 6.6% of the women) felt that the supervision they received was closer or more exact-

ing than that given their seeing fellow workers. One definitely does not get the impression that the blind worker adds to the supervisor's burden, but one must, of course, allow for the possibility that the supervisor may be able to watch the blind worker while remaining, himself, unseen. A third of the men and 21.5% of the women supervise other workers at least occasionally; thus, 30.8% of the entire group is accorded the compliment of this trust by the employer.

Although other people and organizations play a part—especially schools, family and friends, and the individual's own efforts—the importance of state and private agencies is suggested by the fact that 59.4% of the men and 61.8% of the women obtained their jobs through agency placement services.

The women are much more likely to have received formal, in-school, training for their work than are the men (46.6% of the women vs. 30.0% of the men); but here, again, the large number of women in office jobs weights the figures.

While a very small number felt that they learned the job more quickly than do sighted workers, 29% of the men and 33% of the women thought they had learned more slowly. More than half (58.6% of the men and 64.6% of the women) reported some problems in learning the content of the job. The time required to learn a job is, generally speaking, significant only in relation to the content and real difficulty of that job, but more than two-thirds of these workers felt that they had reached full proficiency in less than three months.

More than two-thirds of these people work in job settings where no union is active, but in most cases, where there is a union, the blind worker is a member. Only 24 men and 8 women report that a union is present, but they are not members. Slightly more than half of those interviewed felt that their blindness limited them either in actual wages paid for the work done, or in their opportunities for advancement to better-paying jobs. Men are more likely than women to reach the higher wage brackets (39.5% of the men and only 17.8% of the women report weekly salaries of \$85 or more). Close to 40% of the women and close to 50% of the men are in the salary bracket between \$55 and \$84 per week. The fact that a larger percentage of women is found in the lowest wage bracket may relate, not only to the nature of their jobs and to their sex, but also to the fact that more of the young workers are women (see discussion of age).

When asked how they feel about their jobs, 70% of the men and 75% of the women warmly respond that they like their work, find it interesting and rewarding. Only 5 to 6% of each sex expresses dislike, boredom, or other negative attitudes.

Since the women show the larger percentage of young workers, it is natural that 43% of them would have been on the job for two years or less, while this is true for only 30% of the men. The same is true for length of time with the company in any job. Men are more likely to be promoted than are women (10.6% of men vs. 5.4% of women), but they are also more likely to be displaced (moved from one job to another within the same company) because of automation, other job changes, or their own inability to do the first job assigned. If we count moves of any kind within the present company, 25.4% of men have made such moves, and 13.2% of women have done so. Thus, 22.5% of these people have changed jobs within the same employing organization. While we do not have figures available for seeing workers, it seems to one who is very familiar with typical work histories that this represents a very much smaller number of job changes than one would find with seeing workers. This appears to support the blind workers' frequent statement that while they may receive salaries which equal those of their seeing fellows, they are tied to the one job in which they were originally hired.

For 235 of these people, the job in which they were interviewed was the first job they had had as blind people. However, 440 of them (58%) had previously held competitive jobs, and 84 (11%) had previously held sheltered jobs since visual loss. Only 157 men (27%) and 28 women (16%) had previously been employed while sighted, and less than half of these had been employed in jobs related to their present work.

TABLE 3
Amount of Vision

<i>Amount of Vision</i>	<i>Men</i>		<i>Women</i>		<i>Total</i>	
Totally blind or light perception only	222	39.0%	59	34.1%	281	37.9%
Object perception or travel vision	107	18.8%	30	17.3%	137	18.4%
Able to read some ink print or to read as desires	240	42.2%	84	49.5%	324	43.7%
Totals	569	100%	173	99.9%	742	100%

Although all those upon whom we report were within the legal definition of blindness,** nearly two-thirds had some useful vision. Often even those with only object perception or travel vision believed their amount of vision to be essential to the particular jobs they were doing; these details are indicated under each job description. For both men and women, the largest vision group was that varying from just enough vision to see ink print under favorable circumstances (usually with some device) to adequate acuity to read whatever might be necessary on the job. In many cases, members of this latter group were performing tasks which

** It was necessary to discard some interviews collected in this research because it was evident that the interviewee had more than 20/200 acuity.

are also performed successfully by totally blind workers; but in other cases, they believed their jobs could not be done without some vision. Again, these opinions are reported under each job description.

TABLE 4
Age of Visual Loss

<i>Age</i>	<i>Men</i>		<i>Women</i>		<i>Total</i>	
Blind from birth	206	36.9%	84	49.1%	290	39.7%
Ages 1 through 19	204	36.5%	55	32.1%	259	35.4%
Age 20 or more	149	26.7%	32	18.7%	181	24.9%
Totals	559	100.1%	171	99.9%	730	100.0%

As was true in the study of blind professional workers and in the study of *Adjustment to Blindness*, a significantly larger percentage of our women interviewees are blind from birth, 49.1% of the women vs. 36.9% of the men. This appears to reflect the greater traumatic incidence of blindness in men. Further support of this may be found in the fact that 22.6% of the men report sudden loss of vision, while only 13.7% of the women so report. Slightly more than two-thirds of both the men and the women report that their vision has been pretty much as it is now for ten or more years. For a very small number, changes in visual acuity have occurred quite recently or they regard their vision as still in the process of change.

Although 10% of the men and 6% of the women are able to mention some favorable effect of visual loss, such as making them more ambitious, more understanding of others, etc., more than 90% of the interviewees listed unfavorable effects in many areas, with the effects upon education and/or work most frequently listed. It may be that these vocationally oriented responses may have been elicited, in part, by the fact that we were discussing their employment with them, and the pervasive effects of vocational limitations on other aspects of their lives was often implied or clearly stated.

Just half of the men (50.5%) state that their jobs require at least some independent travel beyond simply reaching the place of employment, but only 23% of the women say this. This is a quite significant difference, and points up the much more active assignments given many men. The women are more frequently desk workers or machine operators whose materials are brought to them.

Off the job, reported differences in freedom of travel are absolutely nil. This is one of the findings which somewhat surprised us, since one readily accepts the idea of women being more protected, less likely to travel freely and independently. However, among this group of employed women, independent travel is reported just as frequently as it is by the men.

Only 33 of those interviewed are dog guide users. Somewhat more than half of the group use no travel aids because they have enough useful vision to make such aids unnecessary. Among the men, 40.6% travel with cane or dog, 4.4% travel only with a human guide; among the women, 36.3% use cane or dog, while 6.4% travel only with a human guide.

These differences between the sexes are insignificant. More than 93% of both men and women say that they regard independence of travel as very important to job success. Roughly 30% of both men and women have received some type of formal travel training.

TABLE 5

Amount of Education

<i>Amount of education</i>	<i>Men</i>		<i>Women</i>		<i>Total</i>	
Less than high school						
graduation	242	42.7%	41	24.0%	283	38.3%
High school						
graduates	187	33.0%	70	40.9%	257	34.8%
Some college	84	14.8%	28	16.4%	112	15.2%
Technical or business						
school	54	9.5%	32	18.7%	86	11.7%
Totals	567	100.0%	171	100.0%	738	100.0%

Significantly more of the men have less than complete high school education (42.7% of men vs. 24.0% of the women). Women in this group tend to be at least high school graduates, and nearly 20% of them have some business or, in a few cases, technical education. The percentage of college graduates in clerical, industrial and service jobs is about the same for men and women; many of these people appear to be working considerably under their formal education level, but that is not true for all. In some cases, although doing office or technician's work, they believe that they are using their college educations, and sometimes say they could not have gotten the jobs without that education.

TABLE 6

*Type of School Attended for Education
Through High School*

<i>Type of School</i>	<i>Men</i>		<i>Women</i>		<i>Total</i>	
Regular public or parochial						
schools—had normal vision						
at that time	191	33.6%	35	20.5%	226	30.6%
Regular schools, possibly in						
sight-saving or special						
classes, had serious visual						
loss at that time	206	36.3%	81	47.4%	287	38.8%
Residential schools for the						
blind	223	39.3%	69	40.3%	292	39.6%

(Note: Since a number of individuals had more than one type of schooling, totals of the above would be greater than the total number of persons in the study. Percentages are based on the 567 men and 171 women on whom we had complete educational data.)

It is interesting to note that almost identical percentages of men and women were educated in residential schools for the blind. Roughly a third of the men, but only 20.5% of the women had completed their education before visual loss and were therefore educated in regular classes as seeing persons. More of the women, although "blind," were educated in regular schools, and this fact may tie in with the fact that more of the women were blind from birth; but, also, more of the women have some ability to read ink print. These children, with very serious visual handicaps, but still able to use some ink print under favorable circumstances, would be most natural candidates for sight-saving classes in public schools.

TABLE 7

Marital Status

<i>Marital Status</i>	<i>Men</i>		<i>Women</i>		<i>Total</i>	
Single	138	24.3%	84	49.4%	222	30.1%
Married	393	69.3%	64	37.6%	457	62.0%
Widowed	11	1.9%	10	5.8%	21	2.8%
Separated/divorced	25	4.4%	12	7.1%	37	5.0%
Totals	567	99.9%	170	99.9%	737	99.9%

As was true in the study of professional workers, the percentage of unmarried women is much larger than the percentage of unmarried men; statistically, this is a highly significant difference and cannot be the result of chance. This probably reflects a combination of factors. As would be true of seeing women, those who are married are less likely to be in the labor force; however, it may also be true that blind women are less likely to marry than are blind men. A natural result of marital status may be found in the fact that while only 21% of the men live alone or room away from their families, 38% of the women live under such circumstances. This is, again, a statistically significant difference, not a matter of chance.

TABLE 8

Participation in Groups

<i>Nature of Group</i>	<i>Men</i>		<i>Women</i>		<i>Total</i>	
No group membership ...	184	31.8%	48	27.4%	232	30.9%
Work-oriented groups ..	79	13.7%	18	10.3%	97	12.9%
Social and church groups	284	49.2%	93	53.1%	377	48.9%
Groups for the blind	108	18.7%	43	24.6%	151	20.8%

(Note: Since a number of individuals participated in more than one type of group, totals of the above would be greater than the total number of persons in the study. Percentages are based on the total number of men and women in the study.)

Although no similar figures for sighted persons are available, this does not look like too unusual a pattern. Perhaps the most interesting part of it is the fact that group activities are not preponderantly oriented toward blindness. These are alert, active people whose interests lie in their churches, communities, sports, and hobby activities. We specifically asked whether the blind employee had social contacts with fellow employees away from the job; roughly 57% of both the men and the women say they do.

AGE RELATED TO OTHER FACTORS

We studied the age of our interviewees in relation to all other characteristics but found surprisingly few statistically significant differences. Those who are in business for themselves tend to be older—nearly half of them are 50 or more years of age—but since there are only 63 such persons altogether this reduces the statistical significance of the finding. The medical service jobs tend to be filled by younger people and perhaps the energy often required for such work is a factor in this.

Younger people tend to work just a little more independently; that is, they slightly less frequently report any form of help from their fellow workers. Older people tend slightly to jobs requiring making of decisions, and similar responsibilities, including responsibilities for other employees and for money. These seem to be natural relationships with age and experience, true for seeing and blind alike. Older people are also more likely to be in jobs which involve contact with the public; only 29% of those under 50 report such contacts while 44% of those over 50 report them. Older people are more likely to feel that they have little supervision and that their work is infrequently checked but, naturally, they are more likely to have been in their jobs for a long time.

Perhaps reflecting improvements in agency services in recent years, younger people are a little more likely to have been placed in their present jobs by public or private agencies (65% of those under age 40 vs. 55% of those over that age). This difference is significant at the .01% level and seems unlikely to be a matter of chance. Younger people are a little more likely to have had formal training for their present jobs, but here the difference is not statistically significant. Age appears to play no part in the speed of learning the job until the worker is 50 or more years of age; then it becomes a small but not significant negative factor.

Persons up to age 29 work more frequently in job settings where there is no union; this is perhaps because they also weight the employee groups in medical-service settings. Younger people also tend to be more satisfied with their wages than are older workers; it is not clear whether this is because they actually make more money or just because their needs are not as great; or perhaps they merely perceive their present salaries as starting salaries since they are relatively newer in their jobs. As a matter of fact, 30% of them make less than \$55 per week while this is true for only 19% of the older workers. When asked how they feel about their jobs, those under 30 and those over 50 are more likely

to say they are satisfied, while individuals between 30 and 49 years of age are somewhat more likely to indicate some aspect of the job they would like to see improved.

The group under age 30 is rather heavily weighted with persons able to do some reading of ink print—61.6% vs. 38.1% of persons over 30. Perhaps this merely reflects the general tendency toward some deterioration in vision with age.

Although persons over 30 are a little less likely to report that they travel freely and frequently off the job, there is no difference related to age in amount of travel on the job. This suggests that older people somehow manage the mobility they must demonstrate to hold their jobs. Also, the mobility off the job in younger people may be related to the larger number of young people with at least travel vision. This greater vision also allows more of the young people to travel without the aid of cane or dog or human guide. There is no age-related difference in the amount or kind of travel training reported.

Those over 50 years of age are less likely to have graduated from high school (52.5% vs. 36.9% of those under 50) while younger workers are a little more likely to have had technical training for their jobs; the difference on this latter point is, however, quite small.

As would probably be true for sighted workers, those under 30 and those over 50 years of age are a little more likely to live alone, away from their families. These are the young people who have left their parents' homes but have not yet established homes of their own, or the older people for whom the home resulting from marriage has broken up as a result of separation or death of the spouse.

Age shows little relationship to group membership except that young people are a little less likely to have made any group connection as yet. In recreational activities one finds the naturally greater interest of the young in sports, while there is somewhat greater tendency for older people to turn to radio, Talking Books, and similar sedentary pleasures.

NATURE OF EMPLOYING ORGANIZATION RELATED TO OTHER FACTORS

Important qualities related to specific jobs are presented under the job descriptions in Section II.

When the worker's attitude toward his income and opportunities for advancement is related to the nature of the employing organization, those who are most satisfied are the self-employed. Next in order are those in sales and distribution, those in educational, religious or social service organizations, and those in medical and various governmental organizations. Significantly less happy about income and opportunities are those in manufacturing organizations, only 30% of whom feel that they have opportunities which equal those of sighted workers. Please note that these are not relationships to job content, but to the nature of the employing organization. This means that the transcriptionist working for a government agency is more likely to be contented with her lot than is the transcriptionist working for a manufacturer, or the janitor work-

ing for a hospital is more likely to be satisfied than is the janitor working for a manufacturer.

TABLE 9

Wages Related to Type of Employing Organization

<i>Type of Organization</i>	<i>\$54 or less weekly</i>		<i>\$55 through \$84</i>		<i>\$85 or more weekly</i>	
Self-employed	17	37.0%	8	17.4%	21	45.6%
Manufacturing	32	13.1%	98	40.2%	114	46.7%
Sales, distribution . . .	12	22.8%	26	45.6%	18	31.5%
Communications . . .	3	27.3%	6	54.5%	2	18.2%
Medical services . . .	44	42.8%	43	41.8%	16	15.5%
Service	32	36.7%	34	39.0%	21	24.7%
Education, religious & social service . .	16	50.0%	11	34.4%	5	15.6%
Insurance, banking . .	2	20.0%	7	70.0%	1	10.0%
Government	12	13.3%	40	44.4%	38	42.2%
Sheltered	1	7.7%	8	61.6%	4	30.8%
Totals	172	24.8%	281	40.6%	240	34.6%

Yet from the dollars and cents point of view, employees of manufacturing organizations fare better than any others! Only 13% of them make less than \$55 per week, and 47% of them make \$85 or more. The self-employed approximate this percentage in the high wage bracket but also have 37% making less than \$55. Employees of various governmental agencies more nearly match those in manufacturing with 42% earning \$85 or more and the same 13% making less than \$55.

TABLE 10

Amount of Vision Related to Employing Organization

<i>Type of Organization</i>	<i>Totally blind or Light perception</i>		<i>Object or Travel Vision</i>		<i>Able to read some ink print</i>	
Self-employed	38	60.3%	11	17.4%	14	4.4%
Manufacturing	106	42.7%	53	21.4%	89	27.5%
Sales, distribution . . .	16	25.8%	113	20.9%	33	53.2%
Communications	4	33.3%	3	25.1%	5	41.7%
Medical services	37	33.4%	17	15.3%	57	17.6%
Service	39	41.1%	13	13.6%	43	45.3%
Education, religious & social service . . .	4	12.2%	5	15.2%	24	72.7%
Insurance, banking . . .	6	60.0%	1	10.0%	3	30.0%
Government	29	30.8%	18	19.1%	47	50.0%
Sheltered	2	14.3%	3	21.5%	9	64.3%
Totals	281	37.9%	137	18.4%	324	43.7%

The above data on the amount of vision among employees of the various types of organizations, as listed, should be interpreted with caution because the two groups which show a very large percentage of workers who can read ink print are actually very small groups; this fact greatly reduces the significance of these figures. It should also be noted that the workers for sheltered shops are chiefly supervisors (not sheltered shop workers in the usual sense). Perhaps the most interesting single finding here is the large percentage of self-employed persons who have no vision at all or only light perception. Actually, the nature of the employing organization shows very little relationship to amount of vision.

TABLE 11

Amount of Education Related to Employing Organization

<i>Type of Organization</i>	<i>Less than</i>		<i>Technical or</i>	
	<i>H.S. grad.</i>	<i>H.S. Grad.</i>	<i>Some college</i>	<i>Business</i>
Self-employed	20 32.7%	19 31.1%	12 19.7%	10 16.4%
Manufacturing	113 43.4%	100 40.2%	23 9.2%	13 5.2%
Sales, distribution . .	23 37.7%	22 36.1%	7 11.5%	9 14.7%
Communications	3 25.0%	4 33.3%	2 16.7%	3 25.0%
Medical services	39 35.1%	35 31.5%	22 19.8%	15 10.7%
Service	33 34.7%	36 37.9%	13 13.7%	13 13.7%
Education, religious & social service . .	13 39.4%	10 30.3%	6 18.2%	4 12.1%
Insurance, banking . .	2 20.0%	2 20.0%	2 20.0%	4 40.0%
Government	31 33.7%	25 27.2%	23 25.0%	13 14.1%
Sheltered	6 42.9%	4 28.6%	2 14.3%	2 14.3%
Totals	283 38.3%	257 34.8%	112 15.2%	86 11.7%

Information regarding the relationships between amount of education and nature of the employing organization is also presented more because we suppose some readers would be curious about this than because significant relationships are evident. What small relationships do appear may be described as secondary, since the real relationships are with the nature of the jobs themselves, not the employing organization directly. We appear, for example, to have a concentration of people with technical or business education in the fields of insurance and banking; the real point is that these employees are transcriptionists, many of whom have naturally gone to business school.

RELATIONSHIPS BETWEEN NEED FOR HELP ON THE JOB AND OTHER FACTORS

Although some statistically significant relationships are found between need for help in some aspect of the job and certain other factors, most of these are so natural that there seems to be little point in discussion.

For example, those who are totally blind or have only light perception more frequently report the need for some type of help. Also, those who are self-employed more frequently need help, often in keeping the necessary business records. There is also some evidence that those who have been blind longest use less help; apparently they have worked out solutions to more of their problems.

Two relationships may, however, be worth noting: of those who say they need no help on the job, 25% describe themselves as having been slow to learn the job; of those who say that they do need help, 34% describe themselves as slow in learning. This difference is significant at the 5% level of confidence. However, we still do not know whether the differences lie in the jobs or in the workers. That is, the individual may both need help and require more learning time because the job itself is inherently quite difficult and complex; or he may, himself, be a less capable person which would cause him to learn slowly and to need help.

Also, those who need help in their work are more likely to feel that their opportunities for advancement are limited. This seems quite logical: if the individual cannot do his present job independently, the employer is less likely to consider him for advancement.

RELATIONSHIPS BETWEEN DECISION-MAKING AND OTHER FACTORS

A number of relationships are found here, but they are pretty much matters of definition. For example, responsibility for making decisions is likely to be reported by persons who have other workers reporting to them, or by persons with public contacts, or with some responsibility for money. Decision-making also characterizes those who are self-employed, who receive little supervision, and whose work is checked only by the satisfaction of those whom they serve. Decision-making is likely to go along with higher levels of education and with the individual's belief that he is well paid and has ample opportunity for advancement, yet the relationship with actual wages is barely significant. Decisions are also more likely to be made by persons with some useful vision and by those who had a good bit of experience as seeing people before the onset of blindness.

RELATIONSHIPS WITH ON-THE-JOB TRAINING

Here, again, at least minor relationships are frequent, but in many cases indirect or spurious. For example, people with only on-the-job training are slightly more likely to describe themselves as quick to learn their jobs—but probably it is the simple nature of the job which made it possible both to learn without prior formal training and to learn quickly. In part, because of their simplicity and repetitive quality, these jobs often bring less satisfaction, so that people who learned on the job are slightly less likely to say they enjoy, and are completely happy with, their jobs. Persons who are totally blind or have only light perception are somewhat more likely to have had some formal training for the job, and it

is easy to understand the logic of giving them such preparation when possible. Persons who do little independent traveling even for their own pleasure are more likely to be placed on simple jobs where only on-the-job training is required, but both of these qualities may merely be the result of more general limitations in their ability.

There is a clear trend away from placing persons with more education on jobs which can be done with on-the-job training only; the O-J-T group is made up of 46.8% with less than high school graduation, 35.5% with high school graduation, 12.8% with some college, and 4.9% with technical or business school. There is also a mildly significant trend away from placing residential school graduates on jobs with only O-J-T requirements, probably because they do have more formal education.

Those who reported problems in learning their jobs are likely to be people with generally negative feelings about blindness and, especially, feelings that others do not accept blind people. They are also likely to be more dependent upon others in travel—they are probably people who have trouble being quick and independent in anything. These data suggest that learning a job is not significantly different from learning other things; the individuals who are quick and capable in school, in travel, and in other forms of independence are likely to be quick to learn jobs of almost any content.

OTHER RELATIONSHIPS WITH JOB FACTORS

Of possible academic interest, as a nice example of a significant statistical relationship which must be interpreted with care, is one found between the way in which job performance is measured and the individual's feelings about his wages and opportunities for advancement. Job performance measures fell into three groups: (1) no measures known to the worker, (2) the opinion of his supervisor, and (3) formal measures such as a count of pieces produced, scrap, rejects, etc. Workers' opinions regarding their wages and job opportunities could be dichotomized into (1) good or favorable attitudes and (2) unfavorable attitudes. Those with no known measure of job performance are a very small group which can be pretty much disregarded for our purposes. We find that of those whose job performance is measured by opinion, 60% have good attitudes toward wages and opportunities while 43% have unfavorable opinions; of those whose job performance is measured in some formal way, 40% have good opinions, and 54% unfavorable opinions about wages and opportunities.

Since this is a statistically significant difference at the 5% confidence level, one might conclude that when the work of blind people is actually measured, the results are not good enough to favor their getting very far in that job; or one might go farther to suggest that they fare better where the only evaluation is opinion because supervisors hesitate to rate a blind worker unfavorably. Yet this is probably a spurious relationship based on the fact that formal measures of performance are most frequently found in the manufacturing organizations, and we have already

noted that the workers in manufacturing organizations have a rather low opinion of their wages and opportunities—although the actual wages compare favorably with the total wage scale. Further study of the matter discloses that many of their responses indicate that they are paid the going rate, but that they see no possibility of advancement, or even transfer. Their unfavorable feelings arise chiefly from the fact that they feel tied to that one job.

Related to this is the fact that workers whose performance is measured formally tend to be in the middle and high income groups, not among those with less than \$55 weekly. Again, this is a secondary relationship. Manufacturing organizations usually have formal measures, and they also usually pay well; many non-manufacturing organizations have no formal measures, but they are the service, social service, and medical service areas, or the self-employed individuals, whose salaries tend to be low.

We also find a significant relationship between the amount produced by the worker and the length of time on the job. Those who have been on the job (or with that company) for seven or more years are more likely to produce as much or more than sighted fellow workers. We do not believe that this means that it takes seven years to get up to production, but, rather, that when a worker survives the layoffs and other changes that come to every company over such a long period, that worker is doing a good job! He has not been kept on the basis of sympathy, cost-plus contracts, etc.

Although the study of relationships between union membership and other job factors shows little of interest, it is nice to note that totally blind persons make up 43.4% of the 166 union members. Another 27.7% of union members have only travel vision, while 20.9% can do some reading. Of the group who work in organizations where there is no union, 36.2% are totally blind. 15.7% have travel vision, and 48.1% can read some ink print.

When we relate the worker's feelings about his wages and job opportunities to other factors, we find absolutely no relationship between these feelings and actual amount of income. In fact, very few people felt they were paid less than are sighted workers in that same job. However, 406 people, or 56%, say that their advancement is limited; and by implication, their future salaries are less than they might be if they could see. Or, at the moment of the interview, they may feel less well paid because they know that other workers who started in these jobs and have been with the company the same or less time have now moved on to better paying jobs. For reasons which are not clear, workers who have been employed competitively prior to the job in which they are interviewed feel better about their wages and opportunities; perhaps these are simply the more versatile and capable people, able to move successfully from one job to another. There is, of course, a natural relationship between feeling good about wages and opportunities and liking the job as a whole, but about 15% of those who are satisfied about the first have some criticism of the job, such as that it is monotonous or not in accordance with their

preparation. Those with less amounts of vision are somewhat more likely to feel limited in wages and opportunities, but the feeling is by no means theirs alone; 39% of people who can do some reading also feel limited. We find a quite significant relationship between the worker's attitude toward his wages and job opportunities and his beliefs about the attitudes of others toward his blindness; he tends to perceive the limitations in the job as generalized unfavorable attitudes toward blindness. Although people with high school education or less are slightly more likely to feel limited in wages and opportunity, they differ only slightly from those with some college. People with technical or business education are least likely to have unfavorable attitudes toward opportunity, and one cannot help hoping that this reflects their more secure and adequate training for their jobs; however, even of this presumably well prepared group, 48% feel limited with regard to advancement.

Although there is some tendency for low wages and limited education to go together, this is by no means a strong relationship. Persons with less than complete high school education also make up 34% of the middle income group (\$55 to \$84 weekly) and 37% of the group making \$85 or more weekly. These findings only very slightly favor the notion that education pays off in dollars and cents. However, I think it is fair to say that people with some or full college educations who are in clerical, industrial and service jobs often have other problems—or perhaps always were inappropriate candidates for college. We definitely do find a higher percentage of married persons in the high income bracket—but is it a cause or effect? Or are the more superior people able to find both mates and well paid jobs?

When we compare people who have been placed on their jobs recently with those on the job for seven or more years, we find that newer workers are likely to have more useful vision, more formal education, and more public school than residential school background. We also find that they are more likely to be single, but possibly they will remedy that when they have been wage earners for a longer time!

RELATIONSHIPS WITH VISUAL FACTORS

As was true among professional workers, those who are totally blind are more likely to have lost their vision after birth, often as a result of trauma; conversely, those who are blind from birth are more likely to have some residual vision. Amount of vision seems to have some relationship with the amount of mobility or more distant travel required by the job; only 35% of those without useful vision must travel on the job, while 46% of those with travel vision and 51% of those with reading vision must do so. Travel off the job shows a somewhat less significant relationship, so some of the relationship found on the job is probably, in part, imposed by the employer.

There is no significant relationship between amount of present vision and amount of formal schooling. If this surprises us, we must remember

that many of these people completed their schooling when they had normal vision or, at least, when the amount of vision was different than it now is. There is, however, clear evidence that totally blind persons are more likely to have had residential school training (48% did). Yet 35% of those who can now read some print also attended residential schools.

There is a moderately significant relationship between amount of vision and marital status. Single persons make up 23% of the totally blind group, 28% of those with travel vision and 36% of those who can do some reading. Obviously this means that more than three-quarters of those without useful vision have been married, while this is true for slightly less than two-thirds of those who can do some reading of ink print. Many interpretations of these facts suggest themselves, but it would take a great deal of detailed research to prove any particular interpretation right.

There is also a significant relationship between amount of vision and membership in groups since people without useful vision are more likely to be members of organizations for the blind. Only 12% of the people who can read ink print identify with such organizations. However, totally blind persons are also somewhat more likely to have social contacts with fellow workers off the job. Perhaps they are simply more social people in general!

While 81% of people who have lost their vision before the age of 20 state that they travel freely (to fit their personal needs) off the job, this is reported by only 69% of those whose visual loss occurred after the age of 20. The older the person at the time of visual loss, the less likely it is that he will become an independent traveler. However, this may be a partially spurious correlation because there is a greater tendency for those blind from birth to retain some useful vision, as previously noted. Those with later visual loss are more likely to have had travel training, but again, the real factor here is that those blind from birth tend to have residual vision which makes travel training unnecessary.

If we compare those who lost their vision before the age of 20 (and therefore probably had at least some of their education as blind persons) with those whose visual loss occurred after 20 (and who therefore were educated as seeing persons), only 36% of the early blind dropped out of school before completing high school, while 45% of the later blind did so. This somewhat suggests that the kind of person who, upon later visual loss, turns to an agency for help is a person who never had much education, never developed much that he could offer an employer when he could see. Perhaps the agencies simply are not seeing, are not being called upon to place, most of the capable, well educated people who become blind.

Age of visual loss shows a very strong relationship to marital status. Of those blind from birth, 45.6% are single; of those who lost their vision between ages 1 to 19, 25.2% are single; and of those whose visual loss occurred after age 20, only 12% are single. Similarly, 34.6% of those blind from birth live alone; that is, they have apartments or are roomers

away from close family members. This is true for only 17% of those who lost their vision when 20 or older. Yet statistics for group membership, including membership in organizations for the blind, show absolutely no relationship to age of visual loss.

TRAVEL HABITS RELATED TO OTHER FACTORS

Mode of travel shows no significant relationship to amount of education except that those who dropped out of school short of high school graduation are a little more likely to establish mobility on travel vision rather than on use of the cane or dog guide; however, this seems much more directly related to the fact that they do have travel vision, than a direct relationship with education. Again, people who attended residential schools are more likely to use the cane or dog guide, but this is because they have less useful vision. Thus, relationships with mode of travel usually prove more directly to be relationships with amount of vision and these have already been discussed.

AMOUNT OF EDUCATION RELATED TO OTHER FACTORS

Amount of education shows a very significant relationship to whether the individual was educated in residential schools or in public schools, but we must keep in mind that many of those educated in public schools had completed their education—or had dropped out of school—before their loss of vision. At any rate, only 28% of those with some residential school experience failed to complete high school, while 43% of those with public school background were dropouts somewhere short of high school graduation. On the other hand, percentages with college, technical or business school show no relationship to source of education.

When we relate amount of education to marital status, the figures are clear enough, but the reasons for them somewhat obscure. The fact is that people who graduated from high school are less likely to marry than are those who dropped out before completing high school, and somewhat less likely to marry than are people with some college, technical or business school education. Our first thought was that since congenitally blind people were less likely to marry, they might have gone to residential schools where they were more likely to complete high school and therefore weight this group. This does not prove true, for there is absolutely no relationship between attendance at public or residential schools and marital status. Perhaps this particular finding in our data is a matter of chance.

There is no significant relationship between amount of education and the organizations or groups to which an individual chooses to belong, including a lack of relationship with membership in groups for the blind. However, people who attended residential schools are much more likely to join groups for the blind.

SUMMARY

From a combination of the detailed tables presented in the Appendix and the information in the preceding pages of this chapter, we might then describe the typical blind worker in the clerical, industrial and service fields as follows:

This worker is a man between the ages of 35 and 45. He is most likely to be employed by a manufacturer if described as an industrial worker, by a medical or other service organization if he is a service worker, or by government if he is a clerical worker. He spends all his working time on the main duties of his job; that is, he rarely has secondary duties. As far as tools and machines are concerned, he functions like his seeing fellow workers, using the same tools and machines without adaptations. He rarely keeps records, but if records are required in his position, this is most likely to be the part of the job on which he needs and receives help, usually from fellow workers.

He is not a decision maker at any complex level, but this is true for his seeing fellow workers, too; that is, the lack of decision making responsibility has little to do with his blindness but much to do with the nature of the jobs covered by the clerical, industrial and service titles. He has very little responsibility for fellow employees but at times does work in a team where it is important to maintain his share of the work in order not to delay or place an extra burden upon others. He is rarely responsible for public contacts at any important level, rarely has more than the most routine responsibility for the property of his employer. He does not feel heavily supervised and usually feels he is treated just like seeing fellow workers as far as supervision and checking of his work is concerned. However, it is the nature of these jobs that most of the work actually is checked either by a standard inspection system or by the fact that other workers finish the product after it leaves the blind worker's hands. He is not a supervisor and does not think it likely he will become one. No changes have been made in his work area because he is blind.

He obtained his employment through a state agency serving blind people and was trained on the job by his employer, although this training may have been made easier by previous school or job experiences. He met pretty much the same problems that seeing workers meet in learning his job and mastered the job in about the same amount of time, or only just a little more slowly, than seeing workers do.

His efficiency is evaluated by his superior or through formal ratings and he produces exactly the same amount that seeing workers on this job produce. He usually works where there is no union but if a union is present, he is a member. He is paid the same salary a seeing person would receive but feels somewhat disadvantaged by the fact that it is unlikely he can move out of his present job, either through promotion to a higher paying job or through movement to another job at the same pay level. He thinks of this lack of freedom to move from job to job as somewhat dis-

couraging, yet he likes his present job and really is not complaining. He has been on this job from one to four years, has rarely worked on any other assignment for his present employer. In fact, there is one chance in three that he has never had any other job.

Although legally blind, he is likely to have at least some small amount of vision. His visual loss occurred early in life, with almost a 50% chance that it is congenital. He feels that blindness has made many very great differences in his life although he feels generally well accepted by those around him.

He is a mobile person, travels to and from work and on the job with considerable independence and he looks upon this independence as very important to him personally and to keeping, or even obtaining, his job. If not aided by travel vision, he is likely to use a cane to achieve this mobility, although he has had little formal travel training.

He is a high school graduate although there is plenty of room, at least in industrial and service jobs, for those with less education and it rather frequently appears that his job does not require the amount of education he has. Unless vision was lost after the school years, there is a good chance he had some education in a residential school for the blind.

He is married and makes his home with his wife and a couple of children, apparently a happy and normal home life. He is likely to be a member of some group, usually a social or church group, and his recreation includes just about all the typical areas of sports, radio and television, music, and doing things with his hands.

He is generally satisfied with the service he received from the state agency for the blind and has rarely used other agencies. He has no major health problems other than his blindness.

He believes that self-confidence, persistence and hard work are the keys to success.

SECTION II

JOB DESCRIPTIONS

The job descriptions which follow were written from the raw data of 752 statements by blind workers, the men and women actually doing the jobs. The descriptions were prepared primarily to meet the following needs:

1. The need of the rehabilitation or educational counselor for a handbook of jobs done successfully by blind workers.
2. The need of the blind adolescent for a resource to which to turn for ideas about possible vocational goals, a resource which gives some concept of job content, personal qualities required for success, and background necessary to obtain such employment.
3. The need of newly blinded adults for information about jobs done without vision, jobs which might be related to training or work with which they had experience as seeing persons, or jobs which they might now like to learn.

This is not a complete catalogue of all the jobs done by blind workers. We know that our chance sampling (dependent largely upon contacts made through the state agencies for the blind) did not include every possible job, and even if it had been complete on the date of the last interview recorded, new jobs would certainly have been added by enterprising counselors and workers since that date. We hope no one will ever feel that because a job does not appear in this book it cannot be done by blind people; rather, we hope these descriptions will stimulate efforts to find more opportunities in which success is not limited by blindness.

Naturally, an effort has been made to group jobs with very similar content. Generally speaking, we use the job title which the worker himself and/or his employer used.

We have attempted to identify, for every job described here, the information appearing in the *Dictionary of Occupational Titles* which most nearly resembles it and have given the DOT number for that job. However, in some cases, the job as described to us is very like two or more DOT descriptions but not exactly like any one of them. In these cases more than one DOT number is given and those who wish to enlarge their understanding of the job by turning to the *Dictionary of Occupational Titles* should refer to both numbers.

The job descriptions are presented here in the order of their DOT numbers and where more than one DOT number is involved we have determined the order by the one which seems more nearly to describe our job.

In parentheses, back of each job title and DOT number, we present the actual number of blind persons upon whose interviews this particular description is based, the sex of those persons, their ages and their visual acuity.

Following each job description, we present in detail the following information for that job:

Job Description
Employer
Hours
Assistance—Supervision
Equipment, Adaptations, Records
Travel
Vision
Education and Training
Compensation

Engineer's aid 005.081 (aid) (1, M, 26, can do limited reading)

Job Description: With increasing demands upon all people with technical or scientific training, there is also an increasing need for helpers to relieve the highly trained individual. The aid of a busy city engineer must assist in collecting information in areas where new water, sewer, and paving construction is being done, making sure that the plan or specification is followed, checking to be certain that any changes in plans are recorded on the related blueprints, even taking samples of concrete for testing purposes. He may assist with surveys in the field and generally does the "leg work" for the engineer. He may also have contacts with the public because, when a resident complains about work near his home, the engineer's aid may be sent out to get the full story and try to correct the difficulty.

This job combines a flare for technical things, an interest in building and construction, and some skill in talking with the public. Accuracy with regard to details of records and quality of workmanship are important. Although our interviewee felt that he had received his major training on the job, some background in engineering is helpful, and for promotions, absolutely necessary.

Employer: A city engineering department.

Hours: A standard 40 hour week.

Assistance—Supervision: Since the aid works very closely with the engineer, assignments are chosen within his visual limitations. Little or no actual assistance is given to him in doing his work. There is very little formal supervision, but since all data must promptly be used in the ongoing work of the department, there are many checks upon its accuracy.

Equipment, Adaptations, Records: Assists in the use of the transit or level; leveler rods, steel tape, six-foot rule used without adaption. Two sets of records are kept of most activities, one of these going into city files, one for the engineer's office; these are kept in ink print.

Travel: Constant travel throughout the city is necessary.

Vision: Good travel vision, ability to check on work visually, ability to read and change prints.

Education and Training: Currently working for a degree in engineering. Good technical background, beyond the high school level, necessary even at hiring and the engineering degree is important to advancement. On-the-job training was continuing after a year and a half in the job.

Compensation: \$2.65 per hour.

Histology Technician 078.381 (1, M, 23, can do limited reading)

Job Description: Many of the wonders of modern medicine would be impossible without the histology laboratory. Here specimens of tissue are studied to inform the physician or surgeon on the functioning of tissues and organs, the causes, and sometimes the progress of disease.

The technician sometimes assists with dissection at autopsies; he is always on call for possible work in the autopsy room. However, most of the tissues and specimens come to him from the operating room, already placed in plastic containers in a fixative of ten percent formaldehyde. His boss receives these containers, describes the tissue in each carefully, takes sections from different areas, puts them in cassettes, and places them in a machine called an autotechnicon. This machine fixes and preserves the tissue, dehydrates it, clears it, and impregnates it with paraffin.

Only after the above treatment is the tissue turned over to the technician. He imbeds the tissue in paraffin, and, using a microtome, slices it so thinly that it contains only one layer of cells, and stains it to define its essential features. This layer he attaches to a slide, bakes it in an oven briefly, and puts a cover slip on it. His part in the preparation of tissue requires about three hours. At times, he uses equipment which freezes the tissue so that it can be cut without first imbedding it in paraffin.

This job requires great delicacy and exactness. The technician must cut through tissue so that he gets the lesion, but does not go through it—not always easy to do. In addition, he must care for his machines, repairing them when necessary. He must keep records of all laboratory studies since patients are billed for whatever studies are done. He works very closely with the histologist who makes the interpretations of what is found.

Employer: Hospital laboratory.

Hours: Regular work week.

Assistance—Supervision: Requires no direct assistance. Is closely supervised by the physician in charge, but as a result of several years of experience, actually works with a good bit of independence.

Equipment, Adaptations, Records: Uses standard equipment of the laboratory. No adaptations except that he uses an optivisor which fits over his head and gives him some magnification in addition to his prescription glasses. Keeps necessary records by conventional means.

Travel: Good mobility within the hospital is necessary.

Vision: Functions like a seeing person except that he uses magnifier, and must get very close to whatever he is working on. Considerable useful vision would be essential.

Education and Training: Dropped out of school in tenth grade. Trained on the job. Formal training as a histology technician would be very desirable.

Compensation: \$325 per month plus overtime.

Librarian Aid, Cataloguer 100.388 (3, F, ages 43 to 53, all able to do limited reading of ink print)

Job Description: Library work involves a multitude of details, not the least of which is the maintenance of a catalogue which accurately represents all books available through that library. Each day brings new books, transfers from other libraries, or replacements for worn or lost copies. All of these must be coded and catalogue cards made for them. One interviewee worked entirely with Talking Books, handling circulation, and giving information over the telephone, both to borrowers of books and to the general public.

A librarian aid may also be asked to compile, and make monthly summaries of statistics on circulation, the number of people using certain aspects of the library service, books borrowed from, or returned to other libraries, etc. All of this requires the gradual accumulation of data throughout the month, the final organization and typing of the data into a report.

One interviewee specialized in working directly with the public. A vivacious woman, she greets people, and helps them find the books they want. This is particularly valuable to children, for whom she also leads a story-telling hour once a week. She cannot see the print of the catalogue, but she knows the library so well, that when the child reads the card, she can guide him to the book, and direct him as he makes the necessary record for borrowing. Occasionally, she does need the assistance of other library workers, for some visual task but she, in turn, cleans the shelves and straightens the books for them.

A love of books, a high regard for accuracy in records, and a desire to serve the public, are important qualifications for this work.

Employers: Public or university libraries.

Hours: 35-40 hours per week. Part-time work may be available.

Assistance—Supervision: Occasional assistance with reading may be given by seeing fellow workers, and the job content may be somewhat tailored to what the blind employee can do. When familiar with the job, workers seem to function with great independence, and certainly with no more than standard supervision.

Equipment, Adaptations, Records: The typewriter was used regularly with no adaptations. Records are important, and numerous, and may be kept in heavy crayon or braille, to be translated monthly into a typed report.

Travel: Mobility within the library is important.

Vision: All could do some reading of ink print.

Education and Training: All three had some training beyond high school, but none was a college graduate. At least two indicated that a degree in library science would have increased their opportunities for advancement.

Compensation: \$265 to \$516 per month.

Registrar (museum) 100.388 (library cataloguer) (1, F, 59, limited reading)

Job Description: Have you ever wondered as you walked through a museum, whether anyone really knew all the things that were there? Large and small, coming from many sources, displayed in cases and hung on walls (and most museums have twice as much in vaults the public never sees!) who can keep track of it all? The registrar—with not one, but two or three cards for every item.

When an object is acquired, either by purchase or by gift, at least two cards are made, one for an accessions file and one for a catalogue. Sometimes, an actual physical description of the object is written out. If the object is a gift, a third card is made for the donors' file. A record must also be made for all objects borrowed from or loaned to other museums.

The registrar may also be asked to provide lists of objects fitting certain categories—such as, everything related to old railroads. Consulting the catalogue is one way to get such information, but having an excellent memory for what is in the museum helps! The registrar also assigns numbers to new accessions, and organizes information to make it more useful.

Curiosity, and a breadth of interest in many kinds of objects, a flair for organization, and good typing skills contribute to success in this work.

Employer: Museum.

Hours: 40 per week.

Assistance—Supervision: Our interviewee was the first person to hold this job, did the total organization, and development of files independently.

Equipment, Adaptations, Records: Typewriter, files, and general office equipment used without adaptation. The heart of the job is the keeping of records, chiefly in typed form.

Travel: Good mobility within the museum is important.

Vision: Could do limited reading of ink print.

Education and Training: Had master's degree, but did not regard this as essential to the job. A good general education plus typing would certainly be necessary.

Compensation: \$350 per month.

Assistant—Newspaper Office 132.268, 258.358 (1, M, 41, limited reading)

Job Description: The small town weekly newspaper is an important communications link. Geared to the needs of a local community, the space given to news items is often matched by the space devoted to advertisements.

Consequently, an assistant in the office of such a newspaper must also divide his time. Since this particular paper comes out on Wednesdays, the first several days of each week are spent in reportorial work—collecting and writing up the events which might interest readers. Most of this news comes to him over the telephone; only occasionally is it necessary to seek news in person. When the paper goes to press, he may assist with the printing. Then he makes a list of advertisers and follow-up stories for the next edition, and during the last couple of days of each week he visits advertisers to obtain copy for the next week. He also writes a column each week, reflecting his own thoughts and comments upon local politics or other events. Some general office duties are occasionally involved, such as accepting money of subscribers who come to the office in person to pay for their papers, or ordering office supplies.

Hours: 40 hour week, may not always require full week.

Assistance—Supervision: Must occasionally ask for help in reading, especially of hand-written material. The organization is small and he works closely with the supervisor-owner.

Equipment, Adaptations, Records: Uses chiefly the typewriter. Keeps lists of subscribers, some records of advertising.

Travel: Requires travel about the town to reach advertisers and, occasionally, to cover new stories.

Vision: Can do very limited reading but does not believe this essential to the work.

Education and Training: Had two years of college. The job requires some ability to write, command of spelling and grammar, an ability to talk with people both over the phone and in person, and to get details which will be organized into either a news story or an advertisement. A good memory is of great assistance.

Compensation: About \$160 a month.

Interpreter (Navajo) 137.268 (1, M, 50, light perception)

Job Description: On the Indian reservations there are still a number of people who either speak no English or speak it so poorly that misunderstandings can easily arise between them and government agencies where only English is spoken.

One Welfare Department office is fortunate in having an interpreter who not only does the direct translations between the Navajo language and English, but compares Welfare rulings with some of the rules of the Navajo tribe so that the Indian can understand them better. This man happens to have had earlier experience as an interpreter with the Bureau of Indian Affairs, so he brings to his work a considerable understanding of the kinds of problems which can arise, the regulations of a number of agencies, and at least some of the solutions which may be worked out. He knows the reservation well and travels within it with great independence.

Employer: Welfare Department.

Hours: Forty-hour week.

Assistance—Supervision: No assistance. Most of the interpretation is done for the supervisor, so he is constantly with this person.

Equipment, Adaptations, Records: None.

Travel: Requires movement throughout the reservation. However, since he is interpreting for the supervisor, usually drives with him.

Vision: Vision is not necessary to the work.

Education and Training: Equivalent of high school.

Compensation: \$255 per month.

Floral Designer 142.081 (2, MF, ages 24-26, both can do limited reading)

Job Description: Few workers are so likely to have their products praised for beauty as are the floral designers. Few workers are so likely to have their products play a part in the important moments in people's lives—weddings, parties, graduations—and death. Few work-

ers are so likely to have some part of their product sealed away in books of memory, the pressed flower that brings to mind some of the happy fragrance of memorable hours.

One woman works as floral designer in a small shop, learning her art from the owner and working under his direction. She makes funeral sprays, corsages and similar arrangements—all except bridal bouquets which she has not yet learned to do. She may also do many other things, for since the shop is small, everyone helps with all the work. Thus, she may wrap plants, wait on customers—and sometimes sweep the floors! Since she has always loved flowers, she is happy to be learning to use them to the greatest advantage and, to some extent, happy just to be working with them.

A man works for a large commercial florist where designers are rarely involved in any other aspect of the shop's activities. When he comes to work each morning, he finds the orders for much of the day's work already waiting on his work table. He must determine which order to fill first, depending on his knowledge of delivery procedures. To fill the typical order, he first gets his container, then the flowers he needs and the greens to go with them. Then he makes his arrangement, usually following certain approved designs characteristic of his shop. He states that every shop has its own designs and particular style, and this is used unless the customer particularly requests something different. When a request for an unusual design does come through, the worker must try to interpret the customer's feelings so that he is "less a designer and more a psychologist." When he completes each design, he passes it on to another worker to be wrapped and sent out.

In this man's job, customer contacts are very rare. He states that he uses his vision very little on the job. As a result of experience, he can, for example, cut stems to the proper length without really looking at them. However, because his depth perception is poor, he knows that occasionally he gets a flower out of line and another designer will either tell him about this, or simply correct it; he thinks this does not occur frequently. Unless specific colors have been requested by the customer, he is free to combine colors as he wishes, and he does have color vision.

Employers: Florist shops.

Hours: 40 to 46 hours per week.

Assistance—Supervision: The only direct assistance is the correction of placement of flowers where depth perception gave a poor result. However, the woman is still in training, and she says she works very closely with the owner.

Equipment, Adaptations, Records: A light weight knife, especially used by florists, wire cutters, tin snips, pinking shears, other shears. None adapted in relation to vision. No records.

Travel: To and from the place of employment only.

Vision: Both have enough vision for limited reading, and it appears likely this would be required, including color discrimination.

Education and Training: Both are high school graduates, and one also attended a floral design school for a sixteen-week course. He feels this was very helpful.

Compensation: \$1.15 to \$1.35 per hour.

Buyer—Distributor 162.158 (6, MF, ages 34-53, vision varies from totally blind to reading with visual aids)

Job Description: For people with a flair for business, the interrelated processes of buying and selling have an endless fascination. Sometimes applied in a very large company, sometimes in a small one where owner, manager and buyer are the same person, the skills required are excellent understanding of the materials to be purchased and of the sources and suppliers. In addition, the buyer, making decisions which may have great effect on the company profit and loss statements, must have foresight and at least a simple knowledge of economics, an ability to get and weigh information so that decisive action can be taken quickly, and a sense of when "the price is right."

The buyer may receive orders from other divisions of his company or, as owner-manager, he may himself make the decisions regarding when purchases should be made. In either case, the first major action involved is determining various sources from which the product might be obtained and finding out from which source the purchase can most advantageously be made. One way to measure "advantage" is, of course, the economic way—from which source can the material be obtained most cheaply? However, that may not be the only consideration. The source with the best dollar price may not be able to make immediate delivery; if your company's production lines are stopped, or if your shelves are bare while waiting for this material, it may be worth while to pay a higher price for earlier delivery. Shipping costs and handling charges may also play a part in the decision.

There may be advantages to buying in larger quantities than are required to meet the immediate need, or if the buyer foresees great changes in the availability of a raw material or in its price, he may demonstrate leadership by urging immediate purchase and storage until it is needed.

Thus, the buyer needs not only an excellent knowledge of the suppliers, but of the total market conditions and some forecast of his own company's future needs. It may be valuable for him to be a student of business and economics, and there are many times when he wishes that he were a seer!

As a distributor, on the other hand, he is a salesman with customers who place orders and need delivery, who must be billed and whose payments must be collected and processed. In short, he has all the responsibilities of running a small business. He may supervise employees who do some of the routine work, leaving him free for purchasing, planning and more critical decision making. Most of our interviewees emphasize the importance of knowing the particular business and the products to be purchased. Although these people varied greatly in their academic backgrounds, they had in common the advantage of business experience. This was often supplemented by a willingness to work long hours, take some financial risks, and carry great responsibility.

Employers: Three self-employed, three private employers.

Hours: Varied from the standard forty-hour week to responsibility for a six-day week from 7:30 a.m. to 10:00 p.m. (with assistance).

Assistance—Supervision: Those who were self-employed had some assistance from wives, friends, or employees—the latter needed not so much because of visual problems as to assist in the mass of work to be done and cover some of the long hours the business was open. All worked with relatively little supervision, but the success or failure of the business formed a practical supervisory check. Assistance with files and records.

Equipment, Adaptations, Records: Visual aids, such as a 20 power electric magnifier and the Magnascope. Tape recorder for noting orders, prices, etc. Cash register, adding machine, other office equipment. Records are important in all these jobs and may be kept in braille, black grease pencil or regular handwriting and typing dependent upon the vision of the individual.

Travel: Chiefly to and from the job, but some in-plant mobility may be required.

Vision: Those with employers all have some ability to read ink print; those who are self-employed have developed ways to manage without useful vision.

Education and Training: Varied from 11th grade to college graduate; for the very complex purchasing done by the college graduate, his level of education was probably necessary.

Compensation: \$2,800 to \$15,000 per year.

Personnel Assistant 166.268 (1, M, 46, light perception)

Job Description: A life insurance company needs salesmen to cover every section of a state or territory and the selection of just the right

men is a very responsible assignment. Our interviewee traveled throughout his state to interview potential insurance salesmen.

His procedure involved writing and placing a want ad in the local newspapers. This ad stated that he would be available for interviews at a local motel between certain hours on certain days. At the proper time, he would travel to that town, register in the stated motel, and await applicants. His major purpose was to learn the character and work qualifications of each man and this was done entirely by interviewing. If the man passed this screening, a form was filled out and sent to the sales manager who would then make the final selection of salesmen.

In order to facilitate placing his want ads, he had obtained a list of all local newspapers from the state university school of journalism. He always stayed in executive suites of a certain type of motel since, he says, these suites are always arranged in the same way and he was therefore very comfortable with his physical surroundings no no matter what town he was in. He traveled with a dog guide.

Roughly one day per week was spent in the home office. Here, his brailled records of the week's interviews could be typed up for the use of the sales manager. Also, he attended the weekly sales meeting, learned about and tried to solve any personnel problems which had arisen during his absence. Opportunity for promotion and a generous expense account when on the road added to the attractiveness of this job.

Employer: Life insurance company.

Hours: When on the road, interviewing, he usually advertised that he would be available in his motel room from 9:00 a.m. to 9:00 p.m.

Assistance—Supervision: When in the field, he is completely on his own and without assistance or direct supervision. However, the quality of the men he chooses forms some check upon his work.

Equipment, Adaptations, Records: No equipment specific to the job. A form must be filled out for each applicant. He manages this by having his brailled notes transcribed on the typewriter.

Travel: Constant—roughly four days a week—travel throughout the state requires excellent and independent travel skills.

Vision: A person without useful vision is successful in this work.

Education and Training: Had completed only tenth grade when an accident caused his visual loss; did not return to school. However, he had some years of experience in the hotel trade which gave both skills in dealing with the public and familiarity with travel. Was trained on the job for about one month before he interviewed independently.

Compensation: \$125 per week.

Maintenance Supervisor 184.168 (1, M, age 60, travel vision)

Job Description: In all of our larger institutions and manufacturing facilities, the work of maintenance men and boilerhouse repairmen is supervised and coordinated by the maintenance supervisor. This person is responsible for all steam and electric equipment, water pumps, and in the case of this interviewee, the sewage treatment plant. In addition to a thorough working knowledge, of all this equipment, the supervisor must be able to identify the sources of trouble from visible symptoms, schedule major overhauls to coordinate with other operations, and advise his superiors through reports of progress and problems. The interviewee was, at one time, a sighted maintenance man and understood the internal working parts of the equipment and how to identify sources of trouble. Although he received assistance in writing reports and requisitions either from his secretary or an assistant, he had no trouble supervising his eighteen subordinates and felt that they all accepted him. On rare occasions when he would have to tear down a piece of equipment, he could do so entirely from memory and his sense of touch. Primarily, however, his duties were supervisory and advisory in nature. He enjoyed his job, and got a great deal of satisfaction out of supervising others and coordinating many varied activities.

Employer: State institution.

Hours: Forty hours per week, but may be called out for advice on emergencies.

Assistance—Supervision: The interviewee received general assistance from subordinates whenever he needed it. Specifically, an assistant or his secretary prepared his bookwork and periodic reports. The interviewee reported directly to the institution deputy superintendent for his supervision. There was no indication that the interviewee was supervised differently because of his vision.

The interviewee personally supervised eighteen persons responsible for carrying out the operational duties as scheduled by him. He did not feel that his visual handicap affected his ability to supervise.

Equipment, Adaptations, Records: Equipment included repair tools such as wrenches, screwdrivers, hammers, pliers, and wire cutters. There were no adaptations. The interviewee was required to prepare periodic progress reports and fill out requisition forms. His reports were compiled by his assistant or his secretary and requisition orders were recorded on tape so that his secretary could type out the forms for him.

Travel: In addition to travel to and from place of employment, on-the-job mobility is required.

Vision: Some of the supervisory tasks and determination of the source of mechanical problems might be difficult for a totally blind person.

Education and Training: It appears that mechanical ability and vocational training are more important than formal education. The interviewee was a licensed stationary engineer and had taken correspondence courses in order to qualify him for this. He had completed two years of college, but this was not related to his job.

Compensation: \$575 per month.

Union Business Representative 187.118 (1, M, 48, very limited reading)

Job Description: A union which maintains a local office is likely to have at least one person who combines union and office management functions. The major job activity is assisting with the negotiation of contracts and the settlement of grievances. This requires a general knowledge of federal, state and local laws and regulations related to employment and the function of unions, but when any difficult legal problems arise a lawyer is, of course, called in. Even more necessary, perhaps, is a good understanding of the local contracts—in the case of our interviewee, contracts with 19 plants and related to 12,000 members.

Another very important aspect of this work is counseling workers who think they have grievances and helping to push toward settlement, or going to arbitration, when there really is a grievance. Often the business representative decides that there is no grievance and he must so advise the protesting worker. This means that he spends a lot of his time listening to people's troubles, letting them "sound off." If the grievance is real, he advises them concerning the procedure to settle it, may bring in outside opinion or call on an international vice-president to assist.

However, the business representative must also supervise the office, with one or more clerical workers who keep records of incoming revenue, expenditures, and other bookkeeping. Mail must be reviewed, and reports must be prepared both for the international union office and for the government. Often it is necessary to visit a plant to talk with either workers, or management, or both.

Employers: Union.

Hours: Regular work week but on 24-hour call for emergencies.

Assistance—Supervision: Requires assistance in reading which is done chiefly by the secretary. When visiting plants, requires a driver whom he pays personally. This is an elective office and is not closely supervised.

Equipment, Adaptations, Records: Uses no equipment. Only personally kept record is his own expense account.

Travel: Plant visits are frequent, accomplished chiefly by use of car and driver.

Vision: Although this man had some useful vision it is not clear that this was necessary to the job.

Education and Training: Graduate of business course in high school.

Compensation: \$90 per week plus expense account.

Recording Director—Radio 194.282 (1, M, 29, totally blind)

Job Description: As we listen to the radio, we are most aware of the outstanding personalities whose names constantly appear as performers, news reporters and sportcasters. However, a host of less well known people support these stars. One of the supporting cast is the recording director and engineer.

This person takes care of recording all commercials. The copy department tells him what they want and what type of music should provide the background; he finds the announcer and the music and handles the actual recording process, operating the controls and putting in the sound effects. Where possible, he uses electronic editing and he has considerable freedom to do a creative job since final judgment is based on whether he produces attractive commercials, something to which people listen with interest.

He also performs a number of other supporting services around the studio. At times he does the audio-recording for TV shows. At other times he takes over the radio control boards when the regular engineer is absent. In doing this, he may use one or more consoles, each involving two turntables, two large tape recorders, one cartridge recording and playback unit. To manage these consoles, he has two special gadgets, but otherwise he works as a seeing engineer would. Recently, he is part of a two-man disc jockey show on Saturday evenings—and, on the side, he runs a candy and donut concession for the employees! Versatility, originality and technical skill combine in this work.

Employer: Radio station.

Hours: Roughly 40 hours a week, but hours vary because of some night work.

Assistance—Supervision: Works very independently and with little direct supervision, in part, because he has been with the organization for eight years.

Equipment, Adaptations, Records: On the radio control board, there is a gauge to tell time in relation to the program on the air. He can-

not read this, so a friend made a gadget which would click to indicate the time. There was also another meter he could not read, so a second gadget was developed to fit over this meter and locate the needle; this, in turn, registers on a brailled scale. Without adaptations, he uses the turntables, recording and playback equipment and the standard controls of the recording engineer. No records.

Travel: Must be able to move about the entire studio with great efficiency.

Vision: Totally blind.

Education and Training: Had a year of college, work experience in the studio, then went to an intensive three-month course in radio engineering. Has first class engineers license.

Compensation: \$1.25 an hour.

Social Worker Aid 195.108 (1, F, 29, object perception)

Job Description: In order to save the time of a professional social worker, an assistant may do some of the simpler activities, functioning somewhere between the professional worker and a secretary.

This young woman spends most of her time in liaison between hospital patients and their relatives, or between the patients and other agencies. The major goals of her activities are getting the patients back home, with proper care and supervision there, or getting them back to work. She interviews both the patients and their relatives, and works with a ward team which includes nurses, psychologists, nursing assistants, and various therapists. The action to be taken is determined by the physician in charge, and she is merely trying to put his recommendations into effect.

When interviewing, she usually makes braille shorthand notes, from which she can later dictate the information gained in the interview. She finds it distracts patients less if she makes these braille notes from memory immediately following the interview, rather than during the conversation. She also finds that her braille notes will usually act as adequate reminders with regard to her own work, so that she rarely has to have the fuller, dictated report read back to her. However, she does have a volunteer who reads for her once a week. Occasionally, when the matter cannot wait for the coming of the volunteer, her supervisor reads part of a record. She does no field work, functions only within the hospital.

This is a semi-professional job, requiring excellent training, a sensitive, socially competent person, and good verbal ability. Since other people depend upon her, she, herself, cannot be a dependent person.

Good mobility, good social skills, good ability to make notes, dictate or write letters, make telephone contacts, etc. are essential.

Employer: A hospital social service department.

Hours: Regular work week.

Assistance—Supervision: Requires a volunteer reader once a week. Sometimes must have part of a record read to her when the volunteer is not available, in which case her supervisor or a nurse will read it. As an assistant, she is pretty closely supervised by the professionals whom she is helping.

Equipment, Adaptations, Records: Uses dictating equipment, typewriter, braille slate and stylus. Maintains her own file of brailled records on active cases, although the complete record is in typed form in the regular files of the social service department.

Travel: Unlike sighted aids, she does no field work. She does travel freely throughout the hospital grounds, and this is important to the job.

Vision: She has object perception, but there is no evidence that she uses vision on the job. She says this affects her only in that sighted aids usually describe the family members, and she cannot.

Education and Training: Has a B.S. degree with a sociology major. This appears necessary to the job.

Compensation: \$5,500 per year.

Experimentee (Scientific Helper) 199.384 (1, F, 45, can do limited reading)

Job Description: Although this is only a part-time job (1 hour per day) and it is difficult to imagine doing this work as a career, it is sufficiently unusual so that it may stimulate consideration of similar work in other settings.

Our interviewee is the subject of experiments in a behavioral science laboratory. Currently, she is part of a visual study in which she must designate which of two figures, flashed on a screen, most nearly resembles a master figure shown above the screen. Formerly, she worked in an audio experiment, sitting in a booth and wearing a headset through which she received various sound signals and instructions. She would push buttons on a mechanism in front of her, depending upon these instructions and the kinds of decisions she was asked to make. She makes a series of about 500 such decisions during her working hour each day. She must sit in the same booth each day, must respond in a completely standard way, in order to maintain the detailed and exacting procedures of the experiment. Although she cannot see who observes her, she knows that all her work is monitored through a one-way screen.

Employer: Behavioral science laboratory.

Hours: One hour per day.

Assistance—Supervision: No assistance. Constantly supervised and observed.

Equipment, Adaptations, Records: Responds to various signals on projector; may signify her response by pushing one of several buttons on mechanism in front of her. No records.

Travel: To and from the place of employment only.

Vision: On present task, requires sufficient vision to distinguish forms flashed on screen.

Education and Training: Had one year of college; it is not clear that this is necessary to the work she is doing.

Compensation \$3.00 per hour.

Legal Clerk 201.368 (1, F, age 36, vision for limited reading)

Job Description: The legal clerk, as described here, is a specialty within the total field of work described under the job title, *Transcriptionist*.

The work consisted primarily of typing legal documents and reports from machine dictation. Secondary duties included photocopying of documents; this is a relatively simple process requiring only the feeding of the document and copy paper through a machine. Some general office work was also done, such as keeping lists of documents which had been sent out.

Employer: Agency of the federal government. It seems probable that similar job opportunities would exist in state and local government and possibly even in private legal firms.

Hours: 35-40 hours per week.

Assistance—Supervision: Occasional assistance was needed in reading documents and verifying typing. No unusual supervision seems to have been necessary.

Equipment, Adaptations, Records: Typewriter, dictating equipment, and photocopy machine were used without adaptation. Frequent record-keeping was involved and done by conventional methods.

Travel: To and from work only.

Vision: As this job was described, some reading of ink print would be necessary, in order to identify documents to be copied and obtain information from files.

Education and Training: Graduation from high school, plus a year of business college was reported. On-the-job training was casual and proficiency was achieved in approximately eight months.

Compensation: Approximately \$460 per month.

Medical Transcriptionist 201.368 (24, MF, ages 20-49, vision varies from totally blind to reading print)

Job Description: Medical transcriptionist is a specialty within the total field of work described under the job title, *Transcriptionist*.

Medical transcribers reported frequent use of central dictation equipment. This means that doctors, in many parts of the hospital, can pick up their desk phones and, by dialing a certain number, activate dictation equipment in the typing room. A buzzer signals when dictation is being done and, upon its completion, it is the duty of the transcriber to remove the used belt or disc and replace it with a new one, ready for the next dictation to come over the phone.

Medical transcriptionists also report use of many forms. Solutions to problems presented by forms have already been discussed for the general transcriptionist, and we are merely commenting here that use of forms is reported much more frequently in medical work.

The major difference between the jobs of the general and the medical transcriptionist lies in the content of the material transcribed and the absolute requirement for correct spelling and use of medical terms. All these workers report that they must constantly learn new terms and nearly all report maintaining a brailled file for this purpose. Other reference material is frequently brailled, including doctors' names and titles, certain patient information, etc.

Very few medical transcriptionists reported secondary duties but some do make appointments and perform other semi-secretarial duties for physicians. One reported acting as a messenger throughout the hospital during about half her working day.

Employers: All but six of the group worked for hospitals; four employers were state or federal agencies and two were private physicians.

Hours: In general, the work week was 40 hours.

Assistance—Supervision: Occasional assistance in making corrections or in obtaining information from files was reported by most of this group. Supervisors or fellow workers gave this assistance. Apart from this help, no special supervision seems to have been needed and this group seems to function as trusted employees at a semi-professional level.

Equipment, Adaptations, Records: All used the typewriter and some form of dictating equipment with no adaptations reported necessary. Brailled dictionaries, lists of medical terms, and other reference material were frequently reported.

Travel: Except for occasional messenger assignments within a building, the only travel required was to and from work.

Vision: Totally blind persons were successful in this work.

Education and Training: All graduated from high school, five from college, six from business school. Nearly all reported some form of special training related to medical terminology, plus on-the-job training lasting from several weeks to several months.

Compensation: Varied from \$200 to \$460 per month.

Secretary 201.368 or 208.588 (6, MF, ages 22-56, vision varied from totally blind to reading ink print)

Job Description: These jobs are distinguished from those of the transcriptionists by greater complexity, variety and responsibility, and by doing transcription for only one or two individuals, so that the closer "secretarial" relationship is maintained. The chief content of the job is transcription of dictated material, sometimes taken in braille shorthand, in other cases through the use of dictating equipment. Material transcribed depended upon the nature of the employing organization and consisted of reports, letters, and memoranda. Secondary duties included general clerical work and record-keeping, looking up information for the employer, and telephone contacts such as making appointments.

One secretary, with considerable experience, reported that the two men for whom she worked often merely gave her the information they wanted to convey and she composed the letters or reports for them.

Another secretary worked for a church and had to answer the telephone frequently, taking down messages or giving information. In order to keep frequently needed information, such as the hours and dates of church meetings, available, he and the pastor had worked out a procedure using a blackboard; this was easily kept up to date in print large enough for the secretary to read.

Employers: Two were employed in governmental agencies, the others by private employers.

Hours: 35-40 hours per week unless on a part-time basis.

Assistance—Supervision: Four persons reported assistance in making corrections and similar visual tasks. Work was routinely checked by supervisors.

Equipment, Adaptations, Records: Typewriters, dictating machines including tape recorders, and an English braillewriter were reported used without adaptation. Records of various aspects of the job were kept by all.

Travel: To and from place of employment only.

Vision: Totally blind persons were successful in this work.

Education and Training: High school graduation appears to be a requirement. Two also attended business school and two had some college training. One had very specialized foreign language training and this was required by his particular job.

Compensation: Varied from \$290 to \$460 per month.

Court Reporter 202.388 (1, F, 36, light perception)

Job Description: Complete and accurate records must be made of the proceedings of a trial, arbitration, or hearing in court. The person responsible for making such records is the court reporter.

Court proceedings may be recorded by manual or machine shorthand or by use of a dictating machine. Our interviewee usually used the latter with the aid of the Stenomask which is a standard attachment for recording devices and is available at many shops which specialize in recording equipment. One end of the "mask" plugs into the recorder while the other fits over the mouth of the operator and allows him to dictate (re-dictate what he hears) without disturbing the proceedings since his voice cannot be heard.

The court reporter may be required merely to transcribe exactly the testimony given in court. Our interviewee, however, often had to do some research involving telephone calls to witnesses and other participants in order to obtain full names and similar exact identifying information related to the testimony. When she had this all compiled she began typing her full and accurate report. When completed, she collated the report and mailed it to the proper authorities. To record names and similar information obtained by telephone, she used braille. She also kept a braille record of the reports she had completed, telephone numbers she used frequently and related reference material. At times, she typed letters and assisted with the compilation of charts, part of which were done by other office staff.

Employer: U. S. Army.

Hours: 40 hours, five day week.

Assistance—Supervision: No special assistance was required, but when asked to work on charts, the work was assigned with consideration for her visual problem. She did not believe that her supervisor gave

her more than usual attention and apparently was quite independent in her work.

Equipment, Adaptations, Records: Dictating machine with Stenomask, typewriter, the standard tools of the office worker. This total job might be called one of record keeping, but braille records of telephone numbers and other important reference information were kept for the worker's own use.

Travel: To and from the place of employment and to hearing rooms within the building.

Vision: It would appear that vision plays no part in success in this work.

Education and Training: Completion of high school for good command of English and spelling, excellent accuracy in typing, and use of the dictating machine. Worked with another court reporter before taking full responsibility and practiced in her spare time to develop speed.

Compensation: \$435 per month.

Stenographic Service (owner-manager) 202.388 (1, F, 42, sees objects only)

Job Description: The public stenographer offers a service greatly valued by small businesses without a regular office force and by larger organizations with occasional heavy loads of typing or mimeographing which their own office force does not have time to handle. The service may include typing from machine dictation (which may be taken over the telephone), preparation of manuscripts, making up of brochures, typing of legal documents such as contracts, making stencils and doing mimeographing and similar duplication. Typing of envelopes for large mailings may also be done and sometimes the envelopes may be stuffed and mailed by the public stenographer.

The stenographer has a good bit of contact with customers, not only in receiving work but in accepting instruction on how the work is to be done; consequently, an ability to deal with the public is important. Often work must be compiled by a deadline so that there is a constant demand for speed in typing. However, highest accuracy is also the standard, especially when the typed material must go to a printer or when it is a legal document. Our interviewee was of the opinion that a sighted assistant is necessary in order to proofread all work and to handle mimeographing where good reproduction must be judged visually. If the stenographer's office is in the home, a family member can do this very well. Occasionally, the help of a seeing person is also necessary to lay out work on a page.

Since running a stenographic or secretarial service is, in fact, running a small business, it is also necessary to keep records of

work done, maintain an inventory of materials used, send out bills, handle bookkeeping, etc. Our interviewee did all record keeping for the business in braille and when, as was occasionally true, it was necessary to keep a customer's stencils on file, these were marked in both ink and braille.

Employer: Self-employed.

Hours: Depends on amount of work to be done.

Assistance—Supervision: A sighted assistant is needed to proofread typing, help with layouts and mimeographing.

Equipment, Adaptations, Records: Typewriter, dictaphone (or equivalent) with telephone hookup, mimeograph machine or other duplicating equipment. No adaptations. Records of the business were kept in braille.

Travel: None.

Vision: With a sighted assistant at least part-time, a totally blind person could succeed in this work.

Education and Training: The interviewee was a high school graduate and had taken secretarial refresher courses. Excellent office skills are absolutely necessary including spelling, grammar, record-keeping and especially fast and accurate typing.

Compensation: Fees charged were \$2.80 per hour for typing, \$3.50 for other work.

Credit Investigator 205.368 (1, F, 44, limited reading)

Job Description: In an economy which is increasingly built upon credit, the credit investigator plays an important, if largely unseen, part. A great deal of credit investigation is done by telephone. Our interviewee makes over a hundred telephone calls a day to employers, neighbors, professional people who have been named as references, and even to other creditors. The purpose of these telephone calls is to establish the character and especially the bill-paying habits of the individual who is seeking credit. Most of the calls are brief, merely establish that the individual is employed, is making the salary he reported, can expect to be a stable worker with a reliable income. Occasionally, however, unusual information is disclosed, checking telephone call becomes necessary, and much extra data must be collected in order to obtain accurate reports.

All the information collected is highly confidential and this job must, therefore, be regarded as a "sensitive" one. Integrity, judgment, thoroughness, and an ability to perceive and track down inaccuracies are important. A pleasing telephone voice and a personality

which inspires confidence assist in getting information which might otherwise be withheld.

Our interviewee was able to use printed records with the aid of a magnifier. She was constantly filling out forms on a typewriter and said she had memorized the number of spaces she must count off in order to get her typing in the right spot on the form. Fortunately her job involved only collecting the information; the actual credit rating was left to a supervisor.

Employer: A credit bureau.

Hours: 35-40 hours.

Assistance—Supervision: Although able to do some reading, she does occasionally require assistance in finding information in the files. She feels that she is closely supervised, her work is selected for her and assigned several times during the day, and the supervisor is always near in case some question arises; however, this appears to be the way all the credit investigators are handled.

Equipment, Adaptations, Records: Some adjustments in the work space were made so that she could get a little closer to things she had to read. The equipment itself was not changed, however. She deals constantly with records, using pen or typewriter for her notations.

Travel: To and from the job only.

Vision: Can do limited reading.

Education and Training: Business course in high school.

Compensation: About \$52 per week.

Microphotographer 207.885 (1, M, age 29, can read print under favorable circumstances)

Job Description: This man worked for an organization which microfilms documents, newspapers, checks, etc., for industrial and business houses. The material is sent to the company's office, where the filming is done by a semi-automatic process. The microphotographer tends the equipment and, especially, loads it with the necessary reels of film. He then positions the records, which are to be photographed, on rollers which feed them through the photographing process, then repacks them and returns them to the owner. Our interviewee had sufficient vision to place the material properly, by visual cues. It was also necessary for him to maintain an index of what was photographed, which would go along with the microfilm to the customer.

Employer: A private organization engaged in making microfilm copies for business and industry.

Hours: 40 hours per week.

Assistance—Supervision: Because he had useful vision, he functioned quite independently, except when an occasional old record was so faded that he had to ask for help in reading the date or other identifying material necessary for his index card. He states that he had little supervision, and apparently he was able to function quite independently.

Equipment, Adaptations, Records: He used standard microfilming equipment without adaptations. As noted above, he made an index card to identify each item filmed, which required him to read enough to find and copy the identifying material.

Travel: To and from the job only.

Vision: To do this job, as described, including the identification of records and keeping of index cards, some reading vision is necessary.

Education and Training: He completed high school but felt that little of this formal training was important to his job. Obviously, it would be necessary to read and write with moderate efficiency in order to maintain the index cards. Two weeks of on-the-job training gave him the basic fundamentals, but he states that it is necessary to continue the learning process, since from time to time new kinds of film are put into use.

Compensation: Roughly \$300 per month.

Transcriptionist 208.588 (38, MF, ages 19-61, vision varied from totally blind to reading print)

Job Description: The primary activity consisted of typing from machine dictation, the content of material typed relating to the nature of the employing organization. Secondary duties included filing, operating a switchboard occasionally, acting as receptionist, training other blind transcriptionists, general clerical and messenger work.

In many large organizations, machines are used for dictation; this is especially likely in organizations where those who dictate spend a lot of time out of the office, such as welfare offices, insurance offices, and sales offices. The dictated material reaches the typist on tapes, belts, or discs which must be correctly placed on the transcription machine; usually this is quite simple to do since they fit in only one way, but if by chance they have been placed in reverse position, this is quickly evident from the garbled material heard, so the error is easily corrected. The typist controls the playback by a foot pedal, may listen all the way through before doing any typing in order to pick up corrections and special instructions, or may have some agreed-up signal from the dictator for such instructions.

The material to be transcribed may be narrative, such as reports of home visits by social workers, or it may be letters, lists, or forms. The typist develops procedures to help place these varied materials correctly on the pages, such as standard tabulator key settings, counting a certain number of spaces or lines to the right position, or having the dictator slightly crease the edge of a paper for something to be typed at just that point.

Sometimes the typist will have a good bit of work waiting for attention. If it must be done in a certain manner, small cards, numbered in both ink and braille, may be useful to mark the order in which work is to be done.

Where form letters are used frequently, typists often find it valuable to transcribe these into braille so that they can be readily available when the dictator asks that they be sent out. Other reference material in braille or, for the partially seeing, in large type, may be helpful; this might include a dictionary, lists of names and addresses, formal titles, and special instructions for work done only occasionally. Braille is sometimes used to take down telephone messages, keep time and work records, etc.

When the typed work is completed, it is usually placed in a folder, or appropriately fastened together so that it may be picked up by the supervisor or delivered, by the typist, to the dictator. One typist, working in a large and complex office, comments that in order to deliver her work correctly she has made a map of the location of desks in the office, each labeled with the name of its occupant, so that she can readily count off the desks to reach the right one for delivery of her work.

Of course, all typists make errors at times. If the error is made shortly after beginning the page, the typist may prefer to start over, rather than correct it. However, if the error is farther down the page, correction is the only economical procedure and if the typist does not have enough vision to make the correction, the supervisor or a fellow worker will, by arrangement, do it. Placing a light pencil mark in the margin, where the typist knows an error was made, may help in this final correction.

One decision every typist must make is when to stop typing on a filled page. One method is to use a backing sheet which is marked in some way, such as having holes punched through it where the page should stop. One typist reports that she leaves the bail on her typewriter up and places the paper against it; when the paper falls, she knows she has only a few lines left.

Many typists point out the importance of a neat, clean, well organized desk and work space. Often they must make a number of copies of dictated material, perhaps using different colors of paper for some copies. Each kind and color of paper, each form, must be

kept in its exact place so that it can be found without help. Obviously, the typist must know when to use each color of paper and each different form. When new to the job, brailleing such details for reference may be necessary. One typist says that when she must make a large number of copies she uses an empty carbon box to assemble them, putting the onion skin on the bottom, then carbon, then onion skin and again carbon, until she has the number she needs. This procedure pretty much positions the pages so that she can easily get them into her typewriter in straight alignment. Some typists also mark one or two of the typewriter keys by pasting something on them; this reassures them that their hands are always in the right position on the keyboard.

Employers: Of this group, thirty were employed by some aspect of government, eight by private employers.

Hours: 35-40 hours per week, occasional overtime not exceeding two hours per week.

Assistance—Supervision: Of this group, twenty-four received occasional assistance from fellow workers or supervisors, chiefly in making corrections or changing typewriter ribbons, filling out forms, or getting supplementary information from files.

Equipment, Adaptations, Records: All used the typewriter and some form of dictating equipment. Two reported the adaptation of brailled keys. Braille dictionaries and reference books were reported by six. Large print books were used by three; stylus and slate by fifteen. Twenty keep some type of record of work completed, etc.

Travel: Except for occasional messenger assignments within a building, the only travel required was to and from work.

Vision: Totally blind persons were successful in this work.

Education and Training: All but one person reported graduation from secondary schools. The person who did not complete high school did graduate from a two-year business school, as did twelve others who had completed high school. Eight reported attending college and three of these completed college and received degrees; there is no evidence that these degrees contributed materially to job success or were requirements for the jobs held. All but three reported on-the-job training. Of the thirty-eight persons interviewed, twenty-two state that they were proficient on the job within six months of beginning employment; only one required as much as eighteen months to gain proficiency.

Compensation: Varied from \$210 to \$460 per month.

General Office Clerk 219.388 (12, MF, ages 20 to 58, vision varied from totally blind to some reading)

Job Description: The title, "general office clerk," is likely to be assigned to workers with very varied jobs—a little bit of almost everything! These jobs are especially likely to appear in small offices, perhaps "one girl offices" or some special section of a larger organization which must function pretty autonomously. The following are merely samples of the kinds of work involved: Taking phone calls and noting messages and orders, giving prices and other information about products or services; doing similar message-taking and information-giving when people come to the office in person; receiving and opening mail, sorting forms by color and delivering to the proper sections of the organization; stuffing envelopes and assisting in mailing; acting as messenger; placing orders by telephone or obtaining information by phone; checking materials or securities in and out; assigning numbers and codes; making copies of documents; keeping simple records, making up payrolls, doing work related to data processing. A variety of office equipment was used, contacts with many kinds of people were involved.

Employers: Three were employed in some aspect of government, and nine had private employers.

Hours: 35 to 40 hours per week. One person had overtime of about ten hours per week.

Assistance—Supervision: About half required occasional assistance with reading small print or handwriting.

Equipment, Adaptations, Records: Typewriter, dictating machine, tape recorder, data processing machine, adding machine, and copying machine with no adaptations. Some persons kept all company records, but most kept only personal output records, records of phone calls, or receipts of transactions. Record keeping aids included the slate and stylus, magnifying glass, and use of a heavy pencil or crayon.

Travel: Occasional office travel, but usually the only requirement is to and from work.

Vision: Totally blind people were successful in this work.

Education and Training: All but two graduated from high school. One person attended business school and another earned a bachelor's degree. Proficiency was achieved in less than one year. Most persons had on-the-job-training.

Compensation: Ranged from \$200 to \$550 per month.

Supply Clerk (Stock Clerk) 223.387 (9, MF, ages 19-54, totally blind to reading)

Job Description: Every organization has to maintain at least some supplies, ready to meet the needs of its workers—office supplies, tools and equipment which are shared by a number of workers at different times, and other types of consumable supplies. When the number of workers to be served is large, the running of the stockroom or tool crib becomes a full time job.

The activities of the stock and supply clerks interviewed included giving out tools and/or supplies to persons who requested them, keeping records of all items taken or checked out, maintaining stockroom shelves in a neat and orderly fashion, taking inventory of items on hand, and sometimes reordering supplies which had become depleted. Self-employed persons in the supply business also had supervisory and advisory duties in connection with running their own businesses.

In some cases, the visually handicapped stock clerk had the employees write out their own tickets or requisition slips for items dispensed; in other cases, large code numbers were within the visual limits of the worker. All depended upon good memories for easy location of the many kinds of materials stored on their shelves. Neatness and care in the original stocking of the shelves was important to smooth running of the stockroom, especially at the busy hours when many employees came in for supplies at about the same time. A pleasant manner and willingness to serve others are important personality characteristics along with a genuine sense of responsibility for the property of the company.

Employers: Four persons were self-employed and the others had private employers. Any large organization is likely to offer this type of employment.

Hours: 40 hours per week. One report of overtime. Those self-employed worked at least 40 hours per week.

Assistance—Supervision: Several persons received occasional assistance from fellow employees in locating supplies, reading letters and orders and taking inventory. Most of these people report very little supervision, seeing the supervisor only rarely or having a supervisor who knows too little about the storeroom to say much about it.

Equipment, Adaptations, Records: Two employees used simple tools for repair or maintenance of supplies. No adaptations. Records were required of all persons who had private employers. They were kept by conventional means and there were no problems reported. Those self-employed either hired persons to keep records or received assistance from wives.

Travel: Some on-the-job travel within the stock room was required as well as travel to and from place of employment.

Vision: Although a totally blind person is found in this classification, this person was self-employed and had primary duties in the management of this business rather than in the stock room. It appears that a totally blind person or someone with light perception could not be successful in this work in industry because of the necessity for on-the-job travel and identification of specific supplies and tools.

Education and Training: All persons had graduated from high school or equivalent. It appears that high school graduation would be a minimum requirement and that business and/or bookkeeping courses would be helpful. Those who had private employers reported achieving proficiency in several months. All of them had on-the-job training. Those self-employed reported at least one year before feeling secure in their business. All of them had had previous management experience.

Compensation: Those with private employers ranged from \$220 to \$560 per month and those self-employed ranged from \$450 to \$600 per month.

Weighmaster 224.487 (1, M, 35, can do limited reading)

Job Description: Any material to be shipped in trucks from an Army depot must be weighed—a responsible job for mistakes are costly. The weighmaster identifies the truck by its license number as it drives on his scale. Then, by a combination of moving weights and reading the dial of the scale, he gets the weight of that truck and its contents. He must also know (in the case of this interviewee, from memory) the weight of the truck when empty; by subtracting this from his scale reading he has the weight of the contents.

This weight is recorded on a slip for the driver and written into a daily record for the depot.

Employer: Army depot.

Hours: 40 per week.

Assistance—Supervision: Since he has memorized the weights of the various kinds of trucks, he has only to identify them by their license numbers, which he can read without assistance. Supervision is accomplished largely by the checks of shipping slips, at the receiving end.

Equipment, Adaptations, Records: In addition to the large scale with which he works, the weighmaster may occasionally use simple tools to balance the scale. No adaptations necessary. Records of trucks weighed each day are kept in pencil.

Travel: To and from the place of employment only.

Vision: Needs to be able to identify license numbers, to recognize trucks and keep his records.

Education and Training: Less than high school graduation. Chief requirement is for simple arithmetic, and writing skills.

Compensation: Approximately \$4500 per year.

Supervisor of Messengers 230.138 (1, M, 26, could do limited reading)

Job Description: A busy hospital is constantly alert, twenty-four hours of every day, ready to provide service, ready to meet emergencies. In part, this service is maintained by a group of messengers who take materials, records, and even patients from place to place within the hospital unit.

The supervisor of such hospital messengers receives telephoned requests from physicians and hospital staff, indicating where a messenger is needed and what he is to do. The supervisor notes the name of the caller and the nature of the errand on a form which he gives to the messenger; he must also note exactly when the call was received, when the messenger was dispatched and when the messenger returned with his task completed. He must know where every one of his twelve messengers is at all times in order to meet emergencies effectively and, because he is their supervisor, he must from time to time travel through the hospital to observe them at work.

Since service must be maintained at all times, the supervisor must develop a work schedule for the messengers and must keep a very accurate record of how many hours each has worked. With roughly 250 assignments completed each day, the supervisor must record how many come from each section of the hospital, also how many trips each messenger makes; this data forms a monthly report.

The interviewee also functioned as locker room attendant, assigning lockers, checking out discharged employees, and keeping the record of locker combinations for about 800 hospital employees. Occasionally he filled in where regular workers were absent, perhaps doing out-patient interviewing, clerical work or receptionist functions. He was also responsible for maintaining the "rolling stock" of stretchers and wheel chairs in working order through making minor repairs.

Employer: A general hospital.

Hours: 40 hours per week.

Assistance—Supervision: No assistance reported. Full responsibility for the job was carried, including hiring and dismissing messengers, discipline if needed, etc. The interviewee seems to have worked with great freedom.

Equipment, Adaptations, Records: Telephone, typewriter and simple tools were used without adaptations. To facilitate accurate time

records, the interviewee bought a tumbler clock showing the hour and minutes in rather large numbers. Records were maintained by pencil and typing, including the compiling of monthly reports as described above.

Travel: In order to check on messengers on assignment, travel throughout the hospital complex was necessary.

Vision: In order to observe messengers at work, it is necessary to have sufficient vision to recognize an individual and note what he is doing and how well he is doing it. This is essential to the supervisory function.

Education and Training: The interviewee was a high school graduate and had one year of college. While not necessary to this particular job, he felt that a college degree and/or courses in hospital administration would be desirable for advancement. He had on-the-job training for one month and felt proficient within six months.

Compensation: \$235 per month.

Distribution Clerk, Mail Clerk 231.588, 231, 688 (4, M, ages 20-43, all able to do at least limited reading)

Job Description: Little do we know, when we drop a letter into the mailbox, how many people must help it move along the way to its destination. In this group, we are describing three of these people plus a fourth person who performs somewhat similar tasks and has a similar title, but who is not involved with mail in the usual sense.

The mail handler works for the Post Office Department, sorting the envelopes by destination, putting them into sacks which he ties, and depositing the sacks on a moving belt which takes them away. A mail clerk in a very large manufacturing plant also does some sorting of mail, but works chiefly as a distributor of packets of envelopes to the various departments. He follows a regular route, may pick up additional items on the way and deliver them along with the mail.

The distribution clerk in the division of motor vehicles deals only with applications for licenses. He sorts these according to type, may then put them into vacuum tubes for automatic distribution or may take large quantities by cart to the long tables where clerks process them. He knows the location of the various work areas which take care of different types of applications and at times he may be asked to take care of emergency applications by personally carrying them through the stages of processing and back to the waiting applicant.

The dispatch boy for a newspaper deals, not with regular mail, but with proofs and tear sheets of advertisements. When a store advertises, it requires a proof of the ad before the paper goes to press in order to be sure everything in the ad is correct. When the ad has

been printed, the store requires a number of copies known as tear sheets, both for display in the store and for billing purposes. Usually it is impossible to wait for the slow process of mailing, so the dispatch boy delivers the proofs and waits for their approval, later delivers the tear sheets to the store. Since he makes many trips to the same stores, he rarely needs help in finding an address and little reading is involved.

Employers: Post Office Department, Division of Motor Vehicles, two private employers.

Hours: Forty hours per week.

Assistance—Supervision: All these people may ask for occasional help in a particularly difficult reading task. This may be done by the supervisor, a fellow employee, or someone along the route. Supervisors are more inclined to give oral instructions when assigning a particular trip.

Equipment, Adaptations, Records: One occasionally runs a ditto machine; otherwise, no tools or records are involved.

Travel: Considerable travel over a large plant, a large department, or even within a city business area.

Vision: Although none of these people sees well enough to function exactly as a sighted person would, all use vision for travel and reading and appear to feel it is necessary to the job.

Education and Training: Varied from ninth grade to two years of college. The chief requirement seems to be reading addresses and good identification of places and people. All had brief on-the-job training.

Compensation: \$225 to \$582 per month.

Insertor Operator 234.885 (1, M, 35, object perception)

Job Description: When you finish writing a letter, you must take a series of brief and simple steps before it can be mailed. You must fold the letter, insert it into the envelope, moisten the flap of the envelope and seal it, then stamp the face. While this whole procedure may take much less than a minute when you do it, it mounts into many hours of work in a large business organization which mails out thousands of letters, statements or advertisements every day.

Such an organization, therefore, uses machines to do this work, one the inserter and the other the mailing meter which stamps the envelope. The inserter operator keeps one hopper of the machine filled with the letters or advertisements, the other with the envelopes. The machine automatically takes a letter and an envelope, opens the flap of the envelope and inserts the letter, moistens the flap, closes and seals it. These finished letters are stacked at the end of the

machine. The whole operation, done by this machine, requires about six-tenths of a second. The inserter operator takes the stacks of mail to the meter which stamps it, ready to be sent out.

Our interviewee sometimes operated a folder, a cutter, and addressograph and several other mailroom machines. Occasionally something went wrong with a machine and he was expected to remedy the difficulty if it was a matter of minor adjustment.

Employer: Large mail order house.

Hours: 40 hour week.

Assistance—Supervision: He needed assistance chiefly during the learning period. The inserter he used was new to the company and while he was given some instruction by the manufacturer's representative, he had to do most of his learning from the manual which he could not read for himself. He, therefore, took it home, had his wife read it to him, and memorized what she read. Because the machine is new to the company, he is observed and production is checked unusually often, but this appears to be more a check on the machine than on its operator.

Equipment, Adaptations, Records: Uses inserter, mailing meter, folder, cutter, addressograph. For minor adjustments, uses wrenches and screwdrivers. Has a specially adapted pair of glasses which enable him to use some vision, but there are no adaptations on the machines themselves. The number of units passing through the inserter is automatically counted by the machine and must be recorded.

Travel: To and from place of employment only.

Vision: This man has object perception; it is not clear whether this is necessary to the job.

Education and Training: Had two years of college, but this does not appear essential to this job.

Compensation: \$85 per week.

Answering Service (owner operator) 235.862 (9, MF, ages 29 to 61, vision varied from totally blind to travel vision)

Job Description: A telephone answering service takes the calls of individuals or businesses when they cannot take calls in their own homes or offices. Physicians are especially likely to use this type of service, but many businessmen also find it helpful and this is particularly true for salesmen who are likely to be out of their offices frequently and for companies which give service on a 24-hour basis, such as oil companies. All but two of our interviewees owned the answering service as well as acting as one of the operators; they, in turn, had employees who worked one or more shifts to give the owner freedom and rest.

Calls come in on switchboards which may have the standard braille attachment which is available through the telephone company. This is so set up that when the customer wishes to answer his phone in his own office, the calls will not ring on the answering service board. When they do come on the switchboard, the operator responds as if it were the customer's own office. In some cases the operator merely takes a message, usually using braille for this, and holds it to be read to the customer when he returns to his office. In other cases, the operator may have been authorized to do much more, such as contacting another physician to care for the patient, sending out a service truck, or getting information in greater depth. One interviewee, who does not use braille well, plugs a tape recorder into the line to take the message after properly indicating this fact to the caller to comply with F. C. C. regulations. Usually it is necessary to keep a record of every call and message; this may be typed into a log to be sent to the customer at regular intervals.

For the operator who is also the owner of the business, there are all the problems and all the rewards of running a small business. For example, it may be necessary first to determine whether there is any need in the community for an answering service. If an encouraging number of people seem to want the service, it is necessary to find space for it and this is usually in the home of the owner. Here, the switchboard is set up and the operator organizes the work space for greatest efficiency. One person, for example, built a pigeon hole system over the switchboard, with a space for each customer numbered in braille with the same number which identified that customer on the switchboard. Thus, when the customer calls for his messages, it is easy to reach up and find them.

With the business ready to function, it becomes necessary to find customers, people who want the service offered. A certain amount of public relations and selling ability is very useful in this phase of the program. It is also necessary to set up business routines so that records are maintained, bills are sent out, books are kept. If the owner is to have any freedom from the job, he must soon hire and train one or more assistants. One interviewee strongly recommended that no one enter this business without first observing another answering service, preferably one also run by a blind person; much can be learned in this way and the newcomer gets some feeling for the problems and possible stresses of the job. Another warns that in considering this work, the operator-owner should realize the long hours for which he will be tied down, at least until the business is large enough to support helpers; he comments that when you are tired and unhappy with your work, you will be illtempered and soon you will lose the few customers you do have. You must like people, have a good memory, be quick and accurate in taking messages, be practical about dealing with emergencies, and be highly professional in handling the confidential material which may come through your hands.

Employers: Two persons had private employers; the remainder were owner-operators.

Hours: It may be possible to find a job in an already established answering service, working standard hours. Most of our interviewees, as owners, carried night shifts, covered the whole of weekends, and therefore at times were on duty 24 hours of the day.

Assistance—Supervision: Assistance in reading printed material and in keeping the business records usually comes from the owner's sighted employees or may be provided by a family member. Most of our interviewees were their own supervisors and set the high standard of service which made the business a success.

Equipment, Adaptations, Records: PBX switchboard, usually with braille attachment (obtained through telephone company); possibly light probe to identify flashing light on board if no braille attachment; typewriter, braille writer, recording equipment. A braille list of telephone numbers, arrangements for record-keeping, billing, etc. may be necessary.

Travel: Usually none—work done in home. Otherwise, travel only to and from the place of employment.

Vision: Totally blind persons are successful in this work.

Education and Training: Seven had completed high school, and of these, two had some additional formal education which they stated was not needed for their work. Good speaking voice, some ability to take and report messages and keep records, and on-the-job training are basic.

Compensation: Varies from \$150 for one operator who worked part-time to around \$750 for owner-operator per month.

Typist-Switchboard Operator 235.862 and 203.588 (2, MF, aged 38-51, one totally blind and the other able to read large print)

Job Description: This job title combines the activities described elsewhere under the titles "Transcriptionist" and "Switchboard Operator." These two interviewees worked in very small offices, spent about equal time on the two activities and appear to have carried more than usual responsibility because of the small number of employees in the offices, and because they had been in their jobs for some years. For details of the job activities, please see "Transcriptionist" and "Switchboard Operator."

Employers: One worked in a government agency, the other for a private employer.

Hours: 35-40 hours per week.

Assistance—Supervision: Except for occasional need for visual identification of some form, both worked without assistance and very independently. Material typed was, however, always read in the course of its use by others.

Equipment, Adaptations, Records: Both used typewriters, dictation machines, and switchboards with standard braille adaptations. One also used a teletype machine. Use of braille for messages was important.

Travel: To and from the job only.

Vision: Totally blind persons are successful in this work.

Education and Training: One was a high school graduate, the other a college graduate but did not regard this level of education as necessary to the job. Both had some on-the-job training and state that they attained full proficiency within a year.

Compensation: Ranged from \$275 to \$325 per month.

Switchboard Operator 235.862 (9, F, ages 21-52, vision varied from totally blind to limited reading of ink print)

Job Description: To the extent that telephone service is important to an organization—and it is the lifeline of many—the switchboard operator occupies a position of both importance and interest. Through her busy fingers go all incoming calls and, in many places, all outgoing calls, too. In some places, outgoing calls may be handled without going through the switchboard at all and, in others, the caller may merely ask for an outside line and then dial for himself.

Several types of adaptation make it possible to handle a switchboard without vision. An operator who can distinguish lights can, of course, use the regular board where a small light signals the location of the incoming call on the board. One interviewee has an electronic mechanism which makes a sound when directly over a light; she uses this to locate the call but admits that this is a slower process. Most of those interviewed had switchboards with brailled numbers and an attachment at the side where indicators rising out of the surface showed the number of the line or extension calling in. In recent years several improvements have been made in switchboards for use without vision, including the Telebraille device, resulting in greater efficiency.

However, the typical switchboard operator does far more than make and disconnect calls. She often takes messages for people who are out, often gives information, usually keeps some records, especially of long distance calls. One operator also keeps a record of local calls to be sure the employer is not overcharged by the telephone company. This can be done quite simply by dropping some small object (dried

peas work well!) into a box whenever a call is made. Then at the end of the billing period, these objects can be counted and compared with the telephone bill.

The amount of responsibility carried by the telephone switchboard operator is to some extent dependent upon the nature of the employing organization. One operator, employed by a hospital, must often decide whether a call is sufficiently important to warrant emergency measures. Another, working in a city hall, must decide which division will take the caller's problem. In every case the operator is, of necessity, an important link in the public relations chain of the employing organization since many customers or other callers have only telephone contacts with the organization; if their calls are well handled they get the impression of order, service, and friendly handling of their business. Thus the switchboard operator's responsibility goes far beyond the mere mechanical routines of connecting wires on her board.

Some switchboard operators have additional duties, which among our interviewees included managing radio phones or paging systems within buildings, reception of visitors and giving information, some simple typing, handling of mail, and other office duties on an occasional basis. One person, employed in a town clerk's office, also registered voters and issued licenses. A good command of braille and some ability to type were frequently important to the job.

Employers: Four were employed by some office of government, three had private employers, and two were employees of a state college.

Hours: Seven worked a 35 to 40 hour week, one worked 44 hours, and one was a part-time worker.

Assistance—Supervision: Only five persons reported needing assistance, and this only occasionally, and usually involved reading. This help was available from fellow employees. Most of these people seem to have worked with very little direct supervision although the nature of their jobs was such that any errors they might make would quickly be evident.

Equipment, Adaptations, Records: Most of the switchboards used had some type of braille adaptation, the type apparently depending upon how long the board had been in use. These adaptations are provided by the telephone company at a small monthly cost to the employer. Typewriters, radio phone equipment, and paging system equipment were sometimes used. All used braille to take messages and occasionally to maintain other types of information. Records were frequently kept, related to long distance and other calls, and to meet special needs of each employer.

Travel: Occasional travel within a building was reported; otherwise, the only need was for travel to and from work.

Vision: Totally blind people were successful in this work.

Education and Training: High school graduation or its equivalent appears to be required, plus some training in the operation of a switchboard either on the job or prior to placement. Efficiency is achieved well within six months.

Compensation: Ranged from \$200 to \$430 per month.

Telephone Operator (Direct Dialing or CAMA) 235.862 (3, F, ages 26 to 52, vision varied from totally blind to object vision)

Job Description: Have you ever dialed a telephone call to a distant place, then heard a pleasant voice say, "Your number please?" Under certain conditions, directly dialed long distance calls must go through an operator who requests the caller's number. The operator records this number on a tape by pressing the appropriately numbered keys of a small machine.

If the calling number is correctly punched, it automatically clicks off and the call goes through. Under favorable conditions, an operator can handle between 300 and 400 calls per hour. However, if an error is made, either because the caller gives a number other than that from which he is calling, or because the operator presses the wrong keys, the number must be checked, repunched, and a notation of the error made to avoid billing the wrong number for the call. This notation may be pencilled on a slip provided for the purpose or braille may be used to make the notation and at break time the blind operator may ask someone to assist her in making the pencilled record.

Although customer contacts are brief, a pleasing voice and politeness in dealing with the public are important while speed and accuracy are absolutely essential.

Employers: The telephone company.

Hours: Usually 40 hours per week. Because telephone service is given 24 hours of the day, seven days a week, there is night, weekend, and holiday duty which is determined by seniority.

Assistance—Supervision: Occasional help may be needed in reading the work schedule or in making up error slips. Supervisors check all operators by plugging into the line, from time to time, to listen to their handling of customers.

Equipment, Adaptations, Records: Headsets and machines for recording numbers were used in standard form. Braille might be used to record errors, later put into pencilled form.

Travel: To and from the place of employment only.

Vision: Totally blind persons are successful in this job.

Education and Training: All were high school graduates and received on-the-job training. Development of efficiency, measured in terms of speed and accuracy, might require several months.

Compensation: Ranged from \$260 to \$320 per month. Wages are covered by a union contract with extra compensation for night hours, overtime and holiday work.

Receptionist 237.368

Receptionist-Switchboard Operator 235.862

Receptionist-Dental Assistant 079.378

(6, MF, ages 20 to 62, vision varied from totally blind to limited reading of ink print)

Job Description: The title "receptionist" is likely to be given to anyone whose primary duty is meeting the public and in many cases this means not merely meeting the public face-to-face, but also answering the telephone, giving information, directing people or telephone calls to the correct person in the organization and making appointments. Since such outside contacts rarely occupy a full working day, clerical or even technical work may be done in the time between visitors and calls.

All our interviewees did some record-keeping and general office tasks, two handled PBX boards, and two, who worked for dentists, sterilized instruments and assisted with certain technical activities. One developed X-ray films. One registered visitors to the club building of a fraternal organization, accepted and was responsible for fees and dues paid.

The most important qualification for this work is liking people and working well with them, but good appearance, neat grooming, pleasing voice, and the ability to express oneself well are very valuable. The ability to keep accurate records of such items as appointments, payments, and message is required. Other office skills, such as typing, may contribute to getting some jobs under this title, but are not always necessary.

Employers: Small business organizations, professional people (dentists), fraternal organizations, and agencies.

Hours: 35 to 40 hours per week but part-time work is sometimes available.

Assistance—Supervision: Occasionally assistance in reading names or schedules was needed by the totally blind employees. Supervisors may have adjusted some assignments to meet visual limitations, especially in the case of the dental offices.

Equipment, Adaptations, Records: Among our interviewees the following were used but no one worker used all: PBX switchboard, typewriter, mailing machine, sterilizer, automatic dental X-ray developer. Switchboard had braille attachments. The X-ray developer had a device which emitted a sound instead of a flashing light when intensity passed a safe level. Records are important in all these jobs and are sometimes kept in braille, later typed.

Travel: To and from place of employment only.

Vision: Totally blind persons are successful as receptionists, but in some cases the additional duties require some vision.

Education and Training: All interviewees were high school graduates. All received some on-the-job training and proficiency was generally achieved in less than six months.

Compensation: Varied from \$240 to \$350 per month.

Mailer 239.587 (1, M, 47, totally blind)

Job Description: Working in the mail room for a large city newspaper, this man's chief responsibility is seeing that there is an adequate supply of wrappers to mail out the next day's papers.

These wrappers are actually waste from the big rolls of paper on which the news is printed. Huge rolls of paper, enough to print 13,000 newspapers, are put on the printing press. As a roll is used up, they slow the printing press down, a new roll comes up and is automatically clamped onto the smaller roll, and the smaller roll is pulled away. It is from these ends of rolls that the wrappers come. Our interviewee processes these, laying the papers out flat in a straight pile, then putting them, criss-cross fashion, on a skid from which they will be taken for use in mailing out the night's newspapers. He is responsible for discarding undesirable paper.

Employer: Newspaper publisher.

Hours: 7 hours a day.

Assistance—Supervision: No assistance or special supervision required.

Equipment, Adaptations, Records: No equipment except for tying bundles of paper together. No adaptations or records.

Travel: To and from the place of employment only.

Vision: A totally blind person is successful in this work.

Education and Training: Had nine years of education, but this formal training is not used on the job.

Compensation: \$100 weekly.

Hotel or Motel clerk and similar employment 242.368 (5, M, ages 23-59, vision varies from totally blind to reading)

Job Description: An interesting combination of varied office skills and public contact work may be found in such jobs as hotel clerk and its twin, motel clerk, management of a trailer court and other real estate. In some cases working as an employee, in others as owner, these people are primarily concerned with meeting and registering guests, taking reservations, signing out guests and accepting their payments, collecting rents from long term guests, and keeping the records necessary. It may be necessary at times to operate a small switchboard, to give information such as prices, or sell occasional items from a small news and cigarette counter.

For those responsible for properties, occasional repairs and frequent inspection are necessary. It may be necessary to make purchases, make deposits, occasionally supervise assistants such as bell-boys. Usually the work is done at a desk or counter, available to the public. Usually hotel desks must be open day and night to accommodate guests who may arrive very late or leave very early; frequently, the beginner's job is on the night shift and it is only with experience that he moves to the busier daytime hours.

For the individual with rather good appearance, pleasing speech, and a gracious manner this can be a very interesting opportunity to meet the public and learn some management skills.

Employers: Hotels, motels, trailer courts, real estate offices, or self-employment as the owner-manager of one of these.

Hours: Varies from a 40 hour week to full responsibility, around the clock, living on the property.

Assistance—Supervision: The hotel and motel clerks had enough vision to handle written records and worked without unusual assistance or supervision. The persons without reading vision all had some assistance, usually several hours a week, from members of their families or part-time assistants. This assistance related to making permanent records, especially for tax purposes.

Equipment, Adaptations, Records: Although this varied from one individual to another, this group of people used such equipment as switchboards, typewriters, cash registers, simple tools for repairs. All keep records in some form: registers of guests or tenants, records of payments, disbursements, etc. Blind workers keep these in braille and have them put into formal reports for tax purposes, etc. by sighted assistants.

Travel: Independent travel throughout the building is necessary, including at times, the ability to guide guests to the proper rooms and give similar services.

Vision: Totally blind persons are successful in the owner-manager type of setting; those who work as hotel clerks have enough vision to do some limited reading.

Education and Training: One completed only eighth grade, the other four were high school graduates. Two had additional business courses.

Compensation: Varied from \$170 per month plus room and board, to \$10,000 per year.

Telephone Order Taker 249.368 (2, MF, aged 26-51, one totally blind, the other with limited reading vision)

Job Description: What is the living link between a customer's desire to place a classified ad in a newspaper and the ad printed there? What is the link between the need of a school or hospital for extra milk and the delivery of that milk? The telephone order taker.

When the telephone signals it is the order taker who answers and listens to what the customer wants. Sometimes it is a simple matter of noting the order on a form or typing out an ad, again in accordance with a form long since memorized. At other times the order taker is also a counselor and/or salesman. He must suggest the solution to the customer's problem, a solution which depends upon his own exact knowledge of what his organization can do, what it can deliver, when, and how much the cost will be. The ad taker often helps the customer to phrase the ad, suggests the most advantageous placement or timing to achieve maximum readership. Changes and corrections must be processed; cancellations, which require use of another form, must be speeded through. At times, other kinds of questions must be answered, making it necessary to obtain information from files or to check a bill. In these latter tasks the blind worker must have a little help from her seeing fellow workers or supervisor, and for this she "pays" by doing extra typing for them.

Orders may be taken in braille, then typed between calls, or they may be typed directly on forms simple enough so that use of the tab key on the typewriter places the item correctly on the page. The typed order or ad is then passed on to the next department for processing. Sometimes people come in person, instead of telephoning, so that it is important for the order taker to make a good appearance as well as speak well, be courteous, helpful, and something of a public relations person. However, the most pleasing of manners has very little value unless it is backed by accuracy and efficiency in the work itself.

Employers: Both were employed by business organizations.

Hours: 40 hours per week.

Assistance—Supervision: One interviewee received assistance in occasional reading and filing; a fellow worker or the supervisor gave this aid. The supervisor also cuts and pastes the ads in order to place them, ready for the printer; an ad taker with normal vision would do this for herself.

Equipment, Adaptations, Records: Both used a telephone with mouth-piece and headset, a typewriter and a braille writer. One uses a dictating machine. All this equipment was used without adaptation. The worker with partial vision keeps rough inventory records.

Travel: Only to and from place of employment.

Vision: A totally blind person is successful in this work, with the aid indicated above.

Education and Training: One graduated from high school and both had some business courses but do not regard these as essential to the job. Major training is on the job and proficiency was achieved in less than six months.

Compensation: Ranged from \$260 to \$375 per month.

Bakery Girl 299.587 (1, F, 28, can do limited reading)

Job Description: Although our interviewee worked in a special kind of bakery shop, one which sells the day-old products of a large bakery, her functions do not materially differ from those of the bakery girl in most supermarkets, except with regard to ordering. Usually the day's stock would depend upon an order which, in turn, would depend upon the bakery girl's judgment of how much would be sold the next day.

In the case of our interviewee, the truck drivers employed by the baking company bring to her store whatever is left at the end of their daily runs. Thus, she has no control over what comes in. Her store sells this day-old merchandise at half price. Her job involves placing the merchandise in the proper place on the shelves, maintaining displays to attract attention to the products it is most important to move, and keeping all aspects of the store neat and orderly. This includes actually sweeping and cleaning, dusting, even washing windows as needed.

However, she also has contact with the customers. This is a self-service store, so customers pick up what they want, bring it to her to be checked out and bagged, and she must, of course, collect and ring up on the cash register the payment for the purchases. Sometimes customers have questions about the merchandise, and she tries to answer these. At times, she also answers the telephone.

It is also her responsibility to remove from the shelves merchandise which is too old for sale even in a "day-old" store. Some

items will not be saleable after a day or two; on hot days, pies deteriorate very quickly, for example. Other items may be kept on the shelves as much as five days. When merchandise is removed from the shelves, it must go into a back room and be accounted for before it is garbaged.

At the time of this interview, the worker was just learning to keep records of merchandise coming into the store, sold or garbaged. Her chief record is that of daily sales, and this is automatically kept by the cash register.

Employer: Baking company.

Hours: This worker happens to work only three days a week.

Assistance—Supervision: Her supervisor is always nearby and may assist if there are too many customers for her to handle easily.

Equipment, Adaptations, Records: Uses cash register, cleaning equipment, wrapping and packaging materials. No adaptations. Must maintain record of money received and of movement of merchandise into and out of store.

Travel: Requires good mobility in store area.

Vision: Must be able to read prices on baked goods in order to charge customer properly.

Education and Training: High school graduate. Requires enough education to keep simple records.

Compensation: \$1.25 per hour.

Maid (Babysitter) 306.878 (1, F, 53, can do limited reading of print)

Job Description: To a woman whose skills center in homemaking, work as a maid in someone else's home may be at once a comfortable and a satisfying job. This is especially true for the older woman who might doubt her ability to learn new work even if she had good vision. Such work is often available in a home where there is a young child and extra money may be earned by working an evening or two a week as a babysitter while the parents go out.

The major part of the job is general housework, using the typical tools of the home: the sweeper, the washer and dryer, the iron. The basic routine is set by the employer but this is rarely a pressure job; there are no production standards to be met and few deadlines. No reading is required in this work and procedures which enable the individual to clean effectively and iron neatly can compensate for much of the vision usually used in doing household tasks.

Employer: Private home.

Hours: Regularly 35 hours per week, plus occasional babysitting in the evening.

Assistance—Supervision: Some assistance may be needed initially to learn where materials are kept and procedures characteristic of that particular home but any new worker would need this. To some extent, the tasks regularly assigned may be so chosen as to be within the worker's visual limits and with this adjustment, no extra supervision is necessary.

Equipment, Adaptations, Records: The standard utensils, tools, and electrical appliances of the home, without adaptation. No records necessary.

Travel: In addition to travel to and from the place of employment, excellent mobility in the home is important.

Vision: It would probably be difficult to persuade an employer to accept a totally blind person, but the standard would probably relate chiefly to whether the worker could do an efficient and thorough cleaning job.

Education and Training: A background of experience in household tasks appears more important than formal education.

Compensation: \$50 per week with extra pay for work in the evening.

Cafeteria Worker 311.878 (2, M, ages 25-60, both able to do limited reading)

Job Description: For the person who enjoys working around food, but does not wish either to cook or to wait on tables, cafeteria work offers other and quite varied jobs.

One man is employed by a hospital and his work is almost entirely the serving of food—that is, the actual filling of the plates. He works from 10:00 a.m. until 6:00 p.m. The first hour is spent filling dietary orders for patients. From 11:00 a.m. to 1:00 p.m., the employee's cafeteria is open, and he works at the steam table, serving. Everything is placed on the steam table for him, so he merely stands there, and as each customer comes along and tells him just what is wanted, he places it on the plate and places the filled plate on the counter to be picked up by the customer. Then he takes time out for his own lunch. Following that, until about 4:00 p.m. he fills special orders for the patients and fills the steam table for the evening meal. From 4:00 to 6:00 p.m. he again works on the steam table, repeating for the evening meal the plate-filling done during the lunch hour.

The hospital installed 300 watt bulbs to light his work area, and fellow workers write their orders in heavy pencil. He says that occasionally he spills something and does not see it, but this has not

proven a great problem. One of his assets is the fact that he has had some experience in meeting the public and does it well. This is rather an important element in success in this kind of job.

Another man is a working supervisor in one cafeteria of a large university. His chief responsibility is directing the work of ten to twelve student part-time workers and three regular employees, but when one or more of these is absent, he often pitches in and does the work himself. His workers are supposed to act as countermen on the cafeteria line, run the dish washing machine, take care of silverware, and act as busboys. In the absence of these workers, he himself may do any of these tasks—and when two are absent at once, he still has to figure out how to get all the work done! In addition, at the end of the day, he takes major responsibility for seeing that the dish machine is thoroughly cleaned, checking its bacteria count in order to be sure. He must be sure the dishes and silverware are all in place for the next service, and that the lines (the serving counter), the work space and the kitchen and bake shop are all clean before he leaves at night.

Although this man has less direct contact with the customers than does the man described above, he has to be a good planner, be quick at re-adjusting the program to use the people available, and be a good leader who can sometimes, when workers are absent, get more than usual work from his employees. Student workers are not always easy to supervise and he often has to jolly them along, or discipline them when they get into arguments among themselves. Also, he has a lot of training to do, since workers are likely to change each term, or at least each school year. Thus, he needs to be a rather flexible person, who can also do every one of these jobs efficiently himself.

Employers: Cafeterias (hospital and university).

Hours: One works from 10:00 a.m. to 6:00 p.m., the other from 11:00 a.m. to 7:00 p.m. Obviously, the busy times, which must be covered on this job, are lunch and dinner hours.

Assistance—Supervision: Neither man has assistance in the direct performance of the job except that the counterman does not place food in the steam table or turn the steam table on for himself. Both may receive assistance in the sense of being told about something they did not notice, such as spilled food, a fork caught in the belt of the washer, etc. Supervision comes chiefly in the form of whether customers are able to move promptly along the cafeteria line.

Equipment, Adaptations, Records: Extra light (300 watt bulbs) and writing orders in heavy pencil are the only changes in work space or procedures reported. No records.

Travel: Excellent mobility in the work space is important to both. They must be able to distinguish customers in the cafeteria line, must be able to see where they place food on a plate and how much, and must be able to locate hot foods accurately without touch.

Education and Training: Eighth to tenth grade formal schooling. Chief training was on the job, but one worker did attend a school which gave some training in food service.

Compensation: \$44 to \$50 per week.

Waiter or Waitress (table and room service) 311.878 (2, MF, ages 22-25, able to read large print)

Job Description: If you enjoy meeting the public, enjoy working around food yet do not want to cook, and want a kind of job experience which could get you employment almost anytime and anywhere, why not consider waiting on tables? This work does require some vision—certainly enough to move about accurately and place hot foods and liquids on a table which may be crowded. Usually it is also necessary to be able to write orders and read them back sufficiently to be sure you pick up the right food and serve it to the right person.

A waitress is assigned a "station," about six tables for which she is responsible. She makes sure the tables are clean and properly set up with place mats, silver and napkins. She also makes sure that the sugar, salt and pepper containers are filled, but usually this work is shared by the waitresses; that is, one girl fills all these containers on one day, another takes the responsibility on another day. When customers are seated at her tables, the waitress greets them, brings them ice water and menus. When they are ready to order, she takes their orders, sometimes answering questions about the food in order to assist them in making decisions. She writes the order in heavy pencil and large enough so that she can read it.

She relays the order to the kitchen and, when it is ready, carries it to the table and serves it. She says fellow workers must, at times, help her identify foods which are very similar, such as distinguishing between chicken and tuna sandwiches. She is able to add up the amounts owed by customers because her writing is large. When the customers leave the table, she must clear it, re-set it, and be ready for the next group of diners. One day a week she comes in early to fill the creamers and prepare the butter chips, and perhaps cut pies, bring out dishes and silver, etc.

A waiter among our interviewees worked in the Room Service department of a large hotel. This means that he does not work in the dining room, but delivers special orders to the guests' rooms, works on private parties, and if he wishes, on banquets. Working

on banquets is a way of earning extra money. When a guest telephones in an order, the girl who takes the order assigns it to the next waiter in line, and relays it to the kitchen. The waiter must make out the check, have it totaled and rung up on the register by the girl, then go for his "set-up" which consists of table, cloth, silver, napkins, water glasses, ice, etc. Then he picks up the food from the kitchen and takes all of this up to the guest's room where he serves it, properly setting up the table, and handling service much as he would in the public dining room. He has to take the tray up the elevators, but will use a wheeled cart if the amount to be carried is large. He is, of course, responsible for obtaining payment for the food and for bringing this back to the Room Service office. He also has to carry money with him to make change. Because he is responsible for a good bit of money at times, he is bonded.

The room service waiter must, like the waitress, sometimes assist in preparing butter, creamers, sugar containers, salt and pepper, etc.

Employers: Restaurants and hotels.

Hours: Hours of work are apt to be irregular, early one week and late the next, or varying with the amount of business expected, whether there is a convention at the hotel, and the season of the year. Usually there is some night work, and the job may require all night work, sometimes with late hours. There may also be overtime, possibly six days a week.

Assistance—Supervision: Both of the people interviewed needed occasional assistance, as in distinguishing food which looks very much alike, in finding things in the kitchen, or in reading orders written by someone else. Supervision is close, not because of blindness, but because of the nature of the jobs.

Equipment, Adaptations, Records: Standard equipment is used without adaptation. In the formal sense no records are kept, but the guest checks are a form of record of work done.

Travel: Must have excellent mobility in the work area which may include an entire hotel.

Vision: Must have enough vision to identify most foods and to serve them safely, possibly under crowded conditions. Must be able to carry foods without spilling, possibly on elevators, through hallways, etc. Those interviewed also had sufficient vision to write and read back their own orders.

Education and Training: Both are high school graduates, and one had a year of college, although the latter is not required for this work. One also had a four-month course at a hotel training school, and regards this as very valuable. Good appearance and some social competency are also required.

Compensation: Because tips contribute largely to income for these workers, it is impossible to state this exactly. One interviewee indicated between five and six thousand dollars a year.

Food and Beverage Services, Short Order Cook, Waiter 311.878, 314.381 (5, MF, ages 27-53, vision varies from totally blind to reading ink print)

Job Description: Small food service operations require a variety of skills. Moderately complex meals may be served by the short order cook who specializes in rapid preparation of simple foods such as eggs, fish, hamburgers, sandwiches, salads and soups. Several of our interviewees built the business around serving beer, but sandwiches and plate lunches are also served. All involve counter service, rather than table service, which greatly simplifies the serving operation for a person with limited vision.

In any case, orders must be placed to assure adequate amounts of food and beverages and this implies that at least a rough inventory must be taken from time to time. It is necessary to check incoming food to be sure the quality and quantity are as ordered. Refrigeration and clean storage for foodstuffs must be given some attention. The cooking skills required are simple, but important to building a good business with customers who return frequently. Dishwashing, keeping the counter clean, and keeping the whole area attractive are more important supporting activities.

Additional important elements in success relate to dealing with the public. The ability to make small talk, be friendly, even tempered, and patient may make the difference between success and failure. Customers are likely to return to the place where they feel welcomed and well served.

A certain amount of management skill is also important. It is necessary to choose a location where a good many people are available to become customers. Public relations, or even formal advertising, may need considerable planning, especially when the business is starting. In order to have fresh foodstuffs, the manager must learn to foresee rather accurately the needs for a given day or week; he rarely works on a margin of profit great enough to allow for much spoiled food. If success comes, the training and supervision of assistants is important to freeing the manager from long hours. Routine bookkeeping is absolutely necessary.

Employers: All self-employed.

Hours: Tend to be long—55, 60, even 96 hours a week were reported.

Assistance—Supervision: In the smaller operations family members help, at least by keeping records or giving support at busy hours. In two of these operations waitresses and other paid assistants were

necessary, not because of the owner's visual problems but to take care of the volume of business. Supervision comes only from the attitude of customers.

Equipment, Adaptations, Records: Commercial cooking equipment, coffee urns, refrigerators, slicing machines, dispensers, steam table. No special adaptations. Routine business records necessary.

Travel: To and from place of employment only.

Vision: Totally blind persons are successful in this work.

Education and Training: Varied from 3rd grade to completion of high school. Formal education necessary chiefly to the record-keeping aspects of the job. All spoke strongly of the importance of on-the-job training.

Compensation From \$4,500 to \$8,000 a year.

Cook 313.381 or 315.381 (4, MF, ages 22-62, two have travel vision, while two can do limited reading)

Job Description: When we are hungry, nothing pleases us more than a good meal, cooked to perfection. This satisfying experience is the end result of a succession of activities performed by the cook. These activities may begin with the planning of the day's menu although in institutions, where patients may require special diets, menus are usually prepared by a dietician. Next, the necessary foodstuffs may be ordered; in large establishments this may be the responsibility of a purchasing department rather than the cook, but in any case, it requires considerable experience not only with foods but with suppliers.

Then the actual preparation of the meal begins. Soups, meats, fish, vegetables, sauces, gravies, salads, desserts and beverages, all call upon the skills of the cook and require the use of a variety of kitchen utensils and equipment. Important, too, are good taste in seasoning and good timing so that all parts of the meal are correctly cooked and ready for service at the appointed time. Finally, the cook assigns portions on serving plates and, in some instances, helps to serve.

Other responsibilities of the cook may include preparing baked goods, keeping records of supplies, cleaning and washing kitchen utensils and equipment and the kitchen and dining areas. Those interviewed worked largely from memory and kept few records so that visual involvement with printed material was minimal.

Employers: One person was employed at a restaurant, the others at institutions.

Hours: 36 to 44 hours per week; all worked a six-day week.

Assistance and Supervision: Two interviewees received assistance from fellow workers: one requested waitresses to write their orders according to a certain longhand code; the other received general assistance during rush periods and quite possibly would have received such assistance regardless of the visual problem. Supervision was casual and the cooks often took over certain management responsibilities in the absence of the owner or supervisor; consequently, it does not appear that the visual handicap of the cook added to the supervisor's burdens.

Equipment, Adaptations, Records: Equipment included the usual kitchen utensils including such things as blenders, grinders, slicers, grills, rotisseries, stoves, ovens, refrigerators, freezers, etc. No adaptations were reported. Two interviewees kept records of supplies on hand and made up orders for purchases in conventional written form. One person also kept a file of bills for tax purposes and established a portion control cost system for the restaurant; this was done in a kind of shorthand devised by the interviewee to fit his visual needs.

Travel: Good mobility within the kitchen and dining areas is important.

Vision: Those with whom we talked felt that a minimum of travel vision was necessary.

Education and Training: Varied from ninth grade to one year of college.

Compensation: Ranged from \$150 plus dinners to \$260 per month.

Dishwasher (Automatic) 318.887 (8, MF, ages 21-50, light perception to limited reading)

Job Description: The reputation of restaurants and dining rooms depends very much upon the cleanliness of their dishes and silverware. Most large restaurants now have automatic machines which not only reduce dishwashing time, but also wash better than hand methods. The interviewees were employed as dishwashers and operated automatic machines for this purpose. After they received bus boy trucks loaded with dirty dishes, they stripped down the dishes by scraping off excess food and by spraying them with high powered water sprayers. Then they stacked the dishes on special dish racks according to size to insure even washing results. After the dishes were stacked, the racks were slid into the dishwashers and the dishes were automatically washed. Another employee was usually responsible for inspecting the washed dishes, removing them from the machines, and restacking them in cupboards. Any dishes that did not pass inspection were returned to be washed again. One interviewee with light perception used his cane to determine the location of empty dish racks and bus boy trucks. Another interviewee had a secondary duty of peeling vegetables. She used knives and a potato peeler with

no adaptations and felt that she had sufficient vision (travel) to perform this task as a sighted worker. After she peeled the vegetables, they were placed in large bowls of water until needed by the cooks. The interviewees felt that they performed as well as sighted workers, but their visual handicaps required them to depend more on their sense of touch than would normally be the case.

Employers: Four were employed by public restaurants or dining rooms, three in hospitals or institutions, one at an Air Force base.

Hours: 40-48 hours per week, five or six days.

Assistance—Supervision: Only three persons required assistance from fellow employees in inspecting glasses, and one when the work piled up. No report of closer supervision of blind employees was given.

Equipment, Adaptations, Records: The only equipment used was the automatic dishwasher. Only one person reported an adaptation in the form of a mark scratched in the temperature gauge to aid in setting the correct water temperature. No records were kept.

Travel: Mobility in the kitchen is important.

Vision: A person with light perception was successful in this job and there appears to be no reason why a totally blind person could not function equally well by tactual cues.

Education and Training: A high school diploma held by one interviewee was not required for this job. All the interviewees received on-the-job training and felt proficient within about three weeks.

Compensation: Varied from \$85 to \$240 per month. The person who earned \$85 (\$20 per week) felt that he was not earning as much as a sighted person with a similar job. The next lowest salary was \$175 per month.

Kitchen Helper 318.887 (14, MF, 23-58, light perception to reading)

Job Description: The person who enjoys a job in the food preparation field, a job that involves working with others, helping others, and seeing that the work area is kept clean and orderly, might investigate the wide varieties of duties that can be met as a kitchen helper.

The most outstanding fact about this group of interviewees is the many different tasks which were done. Assignments outside the kitchen itself included final arrangement of trays for institution patients, delivery of trays, and assisting patients with eating. One interviewee ran a large coffee machine, kept it supplied with clean cups, and also took over every day at the cash register during the noon hour. In the kitchen itself, duties ranged from operating an automatic dish washer, or cleaning dishes by hand, to helping with

actual preparation of foods. Activities may also include cleaning and maintenance of floors, tables, and other equipment such as refrigerators. Most reported doing many different types of things during a single day; for the most part, a kitchen helper is not constantly repeating a few simple motions. There is opportunity for taking responsibility in noticing jobs to be done, and satisfaction expressed in a feeling of accomplishment.

Those who worked in institutions where they had a great deal of contact with others—whether children, older people, Veterans, or hospital patients—volunteered the information that they enjoyed being friendly with these people and the satisfaction of helping them. They must also learn to work fairly closely in a team relationship with the rest of the kitchen staff.

Employers: Chiefly institutions, ranging from a small home for deaf children to a large Veterans' hospital, and from a general hospital to the kitchen of a motel chain.

Hours: Ranged from 27 to 48 hours per week. None were engaged in night work, but some mentioned hours that were split, since they were associated only with actual meal hours.

Assistance—Supervision: Supervision of this type of work is usually rather constant; the nature of the word "helper" implies that someone else is present and responsible in the larger sense for the completed task. In turn, some of the interviewees assisted in supervising other new employees, or children, or patients who might from time to time be working in the kitchen or dining room areas.

Equipment, Adaptations, Records: A wide variety of household equipment, sometimes modified for institutional use, was reported such as: brooms, vacuum cleaners, mops, automatic dishwashers, blenders, mixers, stoves, wheeled trays. No special adaptations were used. Record keeping was not necessary for any of these workers.

Travel: To and from the job. Also most reports included travel on the job in varying amounts. Because of the different tasks, and large size and complexity of institutional kitchens, more travel is required here than for many other kinds of work.

Vision: More than half the group can see well enough for limited reading, although reading as such is not required by the job.

Education and Training: Education reported by this group varied from no formal schooling to one year of college, but no special level is required by the job itself. On-the-job training is given either formally or informally. The most important qualifications are a willingness to work and ability to work with others. The satisfactions would include seeing a job completed well and helping others.

Compensation: Ranged from \$104 to \$424 per month. Sometimes meals are furnished these employees, and in two cases the worker also received his room.

Pot Washer; Dishwasher (Manual) 318.887 (4, MF, ages 25-51, vision ranged from object perception to limited reading)

Job Description: Even in a restaurant, pot washing for the most part is done by hand. The pots and pans, some of them quite large and heavy, are brought to the pot washer. He then scrapes excess food from them, and, using a scrub brush and detergent, scrubs them clean. Our interviewees reported that they could usually feel whether the pot or pan was clean. After the pots were washed, they would be put aside to allow the water to drain off. Another employee would then stack them in cupboards or take them directly to the cook. Secondary duties of the pot washer included operating the automatic dishwasher, mopping kitchen floors, cleaning work tables, and disposing of trash and garbage.

Although most restaurants now have automatic dishwashing machines, some still do not, and one interviewee washed dishes by hand. The dishes were brought to her in trays by other employees and washed in a sink using detergents and sponges to get the dishes clean. Dishes with "caked on" dirt were left in the sink to soak and were washed last.

All of the interviewees reported that they performed as sighted persons, except for one person who reported that during rush periods, he tended to overlook small objects. Assistance was provided in such instances. Generally, the interviewees liked their jobs even though most of them felt that the pay was too low or that working conditions were poor.

Employers: Two were employed at public restaurants, one at a hospital cafeteria, and one at a state institution.

Hours: 40 to 60 per week—usually six days.

Assistance—Supervision: Two interviewees received general assistance during rush periods. Supervision was casual and normal.

Equipment, Adaptations, Records: Aside from scrub brushes, the only equipment used was for performance of secondary duties. Several interviewees used the automatic dishwasher and one used a meat grinder when preparing salads (rarely). No adaptations were reported. No records were kept by any of the interviewees.

Travel: In addition to travel to and from place of employment, some on-the-job mobility was required.

Vision: A minimum of object vision would probably be a requirement for this job, though a totally blind person could possibly learn all the duties adequately.

Education and Training: On-the-job training appears to be more important than formal education. All interviewees had on-the-job training or prior experience and felt proficient within a few months.

Compensation: Ranged from \$80 to \$250 per month.

Vending Stand Helper 318.887 (3, MF, ages 27-57, vision varied from object perception to limited reading)

Job Description: Although managers of vending stands were not included in this study (since such stands represent a business enterprise, not a clerical, industrial or service activity), it seems appropriate to include here the special category of "kitchen" helper, the assistant in the vending stand.

Two of these workers are apt to start their day by heating water for tea and by making coffee through the use of rather complex coffee machines or urns. The stands begin to serve coffee very early in the day and may serve many gallons of it before the day is over. Their early customers are on their way to work; then there are coffee breaks, then lunch, then afternoon breaks. Thus, there are a number of periods of peak service for which the helper prepares, during which he may function as cashier, and following which he may clean up. The helper does not do any actual cooking, but places food where it is available for pickup, puts donuts in cases, wraps sandwiches, puts pastry on plates, dishes up salads.

The helper must also give a good bit of time to cleaning up the counter and service area, the tables, and perhaps the entire food service area. As soon as customers leave a table, the used dishes must be removed and the table cleaned. Containers for sugar, salt, pepper, napkins, etc. must be filled. And, of course, dishes must be washed! One helper uses a dishwashing machine. The helper may do some record-keeping, may order needed supplies, may receive and stack supplies when delivered. Contacts with the public are constant.

One interviewee services a route of automatic vending machines, selling chiefly packaged candies, especially candy bars, and packaged crackers and small cakes. This man owns an automobile for which he has a driver. The driver may also act, to some extent, as an assistant throughout the day. The vending machines must be cleaned, filled with merchandise, and at times given minor repairs. Money must be taken from the machines and recorded. The driver arranges the displays in the machines himself, distinguishing one candy bar from another by touch; there is always some small bit of difference by which they can be identified.

All these workers have contacts with the public, although the last man described has contact chiefly with the companies in which the vending machines are placed. Good appearance, neatness and cleanliness are essential to all, and a friendly, welcoming manner is an advantage.

Employers: Vending stands and association for the blind.

Hours: 40 hours per week.

Assistance—Supervision: The first two workers described receive little or no assistance—they are there to give assistance to others. They are rather closely and constantly supervised by the managers. The last man described uses his driver as a helper in some activities, and is generally free from supervision because he works in the field.

Equipment, Adaptations, Records: Coffee makers, kitchen utensils, serving utensils, dishwashing machine, vending machines. Simple hand tools may be used to repair the vending machines or make adjustments. All these workers have some responsibility for simple records.

Travel: All these workers must have excellent mobility in the work space, moving from table to table, handling cleaning operations, and often working in crowded space. The last man described must also be able to travel with moderate independence, in relatively strange places.

Vision: The vending machine serviceman appears to use little vision in his work, and totally blind people are quite successful in this activity. The other workers are certainly more efficient in finding areas which need cleaning, etc. because they have some useful vision.

Education and Training: Actual education varied from 8th to 12th grade. The activities involved in these jobs are not academic, although it is necessary to be able to keep some simple records. Training for the stand helper may be given in a concentrated way in an on-the-job type of setting.

Compensation: \$46 to \$80 weekly.

Food Service Supervisor 319.138 (1, M, 36, can read ink print)

Job Description: Evidence of the opportunities for growth in the cafeteria field can be found in the story of a young man who started by washing dishes and is now food service supervisor for a state college. He worked his way up, doing whatever was needed, learning as he went, and accepting responsibility as opportunities were offered. He is now completely responsible for food service to 6000 students and faculty daily, plus many catering assignments for special parties, luncheons and banquets.

Although he now rarely becomes involved in actually using equipment, he has a general knowledge of all the dishwashers, coffee urns, steam tables, etc., and has a command of routine maintenance and repair. He selects, hires, trains, and makes work assignments for 40 to 45 day workers and 15 to 20 people on a night shift. Although good vision would make his job easier, he sees enough to check the work of these employees and to handle their training effectively.

Success in this job is built upon service, a word which includes both the technical aspects of well prepared and served food, and the attitude of welcoming and wishing to serve customers. This field offers great opportunity for a person who is willing to learn a great variety of skills related to food preparation, but who enjoys balancing these with good customer relations, a true interest in people, and a true desire to build the business.

Employer: A college.

Hours: Generally works a 40 hour week, but overtime may be necessary for special catering assignments.

Assistance—Supervision: Is able to do all operations for himself if necessary. Obviously many subordinates are necessary to handle the large numbers served. Little direct supervision, but indirectly, is constantly supervised by whether customers are pleased.

Equipment, Adaptations, Records: Uses all commercial food preparation equipment without adaptation. Keeps fairly complex records of service, inventory, income, etc.

Travel: Needs superior mobility throughout food service area.

Vision: It would be difficult to train and supervise this large number of people without helpful vision.

Education and Training: High school graduation plus some accounting. States that a complete course in management would be very helpful.

Compensation: \$575 per month.

Apartment or Boarding House Manager/Owner 320.137 (3, MF, ages 52 to 56, travel vision to limited reading of print)

Job Description: An important person in every small apartment or boarding house is the manager. This person is responsible for making the residence as attractive and comfortable as possible for the tenants, yet must also at times establish rules and see that they are followed.

In relation to the tenants, duties include showing the available space to those who inquire, accepting and registering new tenants,

collecting rents at regular intervals, dealing with questions and complaints, possibly answering the telephone and taking messages. However, the major working time is spent in maintaining public areas such as hallways and lobbies, purchasing supplies, arranging for outside services such as fuel delivery, trash collection and heavy repair work. Minor repairs are often done by the manager. Except for occasional assistance with records and reading, all tasks were done as they would be by a fully sighted person.

Employers: Two were self-employed since they rented or owned the place they managed; one worked for an apartment owner.

Hours: Although about 45 working hours are reported, these people live where they work and are on call for emergencies around the clock.

Assistance-Supervision: Occasional assistance with reading printed material was reported and one manager was aided by a relative in keeping rent records. Even the worker who was not self-employed seems to have required and received little supervision.

Equipment, Adaptations, Records: Equipment included the usual maintenance items without adaptation. Records for the manager's own use may be kept in whatever form is most appropriate to the individual's vision, but records for another owner are put into some form of ink print such as typing.

Travel: Good mobility throughout the place of employment is important.

Vision: All the interviewees had at least travel vision.

Education and Training: One interviewee had completed a year of college. This appears unnecessary for the job since the others had not completed high school. A minimum of some simple record-keeping skills seems important.

Compensation: Exact income statements not available but all had their homes plus some financial return.

Cosmetologist 332.271 (2, F, ages 20 and 28, vision: reading)

Job Description: Almost every woman likes to look her best; and what better way is this desire fulfilled than by good hair grooming? A great many women, for one reason or another, are unable to care for their hair themselves, or prefer the professional quality of a trained hairdresser's work, and this is when the services of the cosmetologist are needed. Creativity, originality, and a liking for work with the public are essential for this job, since the cosmetologist is in contact with people all day. First, she greets the customer and asks what she would like to have done with her hair. A shampoo

usually follows, and, depending upon the customer's wishes, a creme rinse, permanent wave or tint may be applied. Since one of the interviewees was color blind, the name of the color tint was written on the bottle. Sometimes, when hair is in poor condition, the cosmetologist may administer a hot oil treatment. When all of the previous steps are completed, using a setting lotion, she then proceeds to set the client's hair, places her under a dryer, and when her hair is fully dry, removes the setting utensils, brushes the hair and styles it. Occasionally, a manicure may be given if the customer so wishes. Great satisfaction is experienced when the cosmetologist knows, from the pleased expression on the client's face, that her services are appreciated.

Employer: Beauty shop.

Hours: Depends on number of appointments.

Assistance—Supervision: Interviewees reported assistance in trimming hair, cutting bangs or tinting brows and lashes, and this aid is afforded by the supervisor. In the case of the interviewee who was color blind, help was needed to determine the shade of the client's hair and color tint to be used. Little supervision was mentioned.

Equipment, Adaptations, Records: Noted equipment includes use of the sink, comb, scissors, manicuring tools, setting utensils and dryer. No adaptations were reported. Records of appointments were kept, in hand, each day.

Travel: To and from place of employment. Some mobility within the shop is required.

Vision: Both had useful vision. Because the cosmetologist is trying to produce a result which has visual appeal, and uses coloring agents, a totally blind person would have limited chance of being successful in this work.

Education and Training: One interviewee graduated from high school and the other completed the 10th grade. Both had from six to eight months of training in a beauty school before securing employment in the beauty shop.

Compensation: Work on commission.

Masseur—Masseuse 334.878 (23, MF, ages 22-59, vision varied from totally blind to limited reading)

Job Description: Whether his clients come to him because of real health problems—pain, stiffness, lack of circulation—or as part of a weight reduction effort, or merely to relieve fatigue, the masseur contributes greatly to the feeling of wellbeing of those he treats.

As the job title indicates, the chief activity involves giving massages or friction rubs which stimulate circulation and relax muscles. Two major methods of massage are used: Swedish which emphasizes use of the palms of the hands for muscle manipulation and Oriental which uses chiefly the finger tips. However, in preparation for giving the massage, it is necessary to see that the room is clean, the table freshly sheeted, the bottles of oil, alcohol, etc. filled and ready.

In many cases, clients have special hot or steam baths and a shower before the massage which must be timed by the masseur. The new client must be guided from room to room and perhaps instructed. Following the massage, sun lamps may be used and there, too, timing is important. Thus, the masseur takes responsibility for his client in a series of activities.

Some interviewees also used physical therapy equipment where not only timers, but devices for determining heat, etc., were necessary. Only persons with some useful vision used this type of equipment. In some cases, it was necessary for the masseur to keep records of the treatment given, which might be done by conventional methods or in braille, to be typed later.

Some interviewees also carried on public relations programs for the health clubs in which they worked, usually by contacting businessmen or physicians to make them aware of the service and to explain how it could help them or their patients.

Physical stamina and considerable manipulative skill in deft and sensitive hands are absolute essentials for this work. Acceptable appearance, characterized by highest levels of neatness and cleanliness, plus a pleasing manner made customer contacts more successful. The masseur needs some training in anatomy and some ability to distinguish clients who should be seeking medical help, rather than merely a massage, for their ills. Occasionally, the masseur finds himself carrying real responsibility for the health of his customers.

Employers: Four were self-employed; 14 were employed at YM or YWCA's or at Jewish Centers; three worked at resort hotels, one at a private health club, one at a hospital.

Hours: 35-44 hours per week, often 5½ days.

Assistance—Supervision: A few persons received occasional assistance from fellow employees or from a supervisor in reading client lists, mail, instruments, or in changing linens, filling alcohol and oil bottles, or operating equipment.

Equipment, Adaptations, Records: Several used vibrators or infra-red lamps without adaptations. A few used physical therapy equipment with adaptations such as sound devices for indication of heat or sonic intensity, and braille timers. Only a few interviewees kept records, either by conventional methods or in braille, later to be typed.

Travel: In many cases the masseur guided his client from the waiting area to a locker, dressing room, steamroom, hot bath, shower area, the massage room itself, and a sunroom. Thus, considerable mobility within a familiar area was necessary.

Vision: Totally blind persons were successful in this work but only persons with some helpful vision reported using physical therapy equipment.

Education and Training: Most persons graduated from high school and one was a licensed chiropractor. All had taken courses relating to health and massage techniques. All felt proficient in less than six months, and felt that on-the-job experience and training programs were very important.

Compensation: Varied from \$140 plus tips, room and board to about \$1,000 for a health club director who was self-employed.

Museum Guide and Guard 353.368, 372.868 (2, M, ages 32-39, both can do limited reading of ink print)

Job Description: To the thousands of people who visit museums every year, museum guides are at once hosts, teachers, interpreters of the history portrayed in the museum exhibits, and helpful officials who assist in solving many problems, meeting many emergencies.

One of our interviewees has handled between five and six hundred people a day, in groups as large as sixty at one time. Since the guide is also a guard, responsible for protecting priceless art, antiques and technical displays, he must be ready to make quick decisions if any visitor's behavior is open to suspicion, and he may carry tear gas bombs, a blackjack, or even a pistol to aid in the enforcement of order.

His major function, however, is that of lecturer, interesting and informing those whom he guides. Depending upon the kind of museum in which he functions, he must know history, art, geology, and science. Not only does he present fairly standard information about the exhibits, but the good guide can answer many additional questions related to the material on display, and needs a thorough command of the fields represented. He must be a student, ever eager to acquire new information and to integrate it into the daily lectures.

He must also have excellent public relations skills. He may greet important visitors from all over the world, may lecture to groups varying from young children in school projects to technical specialists on tour from professional conventions. Obviously the guide needs a flexible vocabulary, a capacity for expressing ideas clearly to people of many educational levels, and considerable patience in answering hundreds of questions each day. He needs a good speaking voice and an acceptable, well groomed appearance; usually he is

in uniform. Also, since he is almost constantly on his feet, he needs energy and physical stamina.

Employers: State museum and Colonial Williamsburg.

Hours: Usually 40 hours per week.

Assistance—Supervision: No special assistance. Both interviewees have some responsibility for supervising others, but work rather independently themselves because of long experience.

Equipment, Adaptations, Records: May use typewriter, tear gas bombs, blackjack, pistol. No adaptations. May keep records of number of persons (sometimes broken down roughly by age groups) guided during a day; this will be compiled into a monthly report.

Travel: Excellent mobility throughout the display area is vital.

Vision: Must be able to observe and supervise behavior of people guided.

Education and Training: Both had about two years of college. Must be well informed in field related to museum displays, well spoken, have good social skills.

Compensation: \$300 to \$350 per month.

Therapy Aid 355.878, 079.368 (2, M, ages 27-47, travel vision and limited reading of ink print)

Job Description: Few hospitals have enough occupational therapists or physical therapists, but they can often enlarge the number of patients served by these professional workers through assigning aids to help with the less critical parts of the activities.

One interviewee worked in the department of physical therapy. He brought patients to the department, returned them to their rooms after the treatments. He prepared therapy machines for use, including diathermy, whirlpool and ultraviolet light; he had enough vision to see the dials on the machines fairly well and had been doing this work for so long that he knew just where to set them. He lifted and otherwise helped patients into the machines. Sometimes he performs general functions of a hospital orderly.

The other interviewee is associated with a department of occupational therapy and may work in the department or may take projects to patients in the wards. He begins his day by preparing the materials necessary for projects to be done that day, laying them out on the tables. He may act as a guard at the door when patients are entering or leaving the shop since this is a mental hospital and the doors are usually locked. He helps each patient find his own project, helps locate equipment as needed, may give some instruction. For patients too ill to do the whole of a project, he may do the more diffi-

cult aspects, such as sawing. At times he visits the wards and writes down the names of patients who request particular projects.

This work may be regarded as semi-professional in nature and especially fits the interests of individuals who would like to work in a medical and social service setting. Patience, gentleness and understanding of sick people are important qualifications.

Employers: Hospitals.

Hours: 40 hours per week.

Assistance—Supervision: The worker in the department of physical therapy occasionally needed help in reading the dials on some of the machines. Supervision is close and constant because the aids work very closely with the therapists.

Equipment, Adaptations, Records: To some extent use all the regular equipment of departments of physical and occupational therapy, but often not wholly responsible for it. No adaptations were reported. May keep records of names of patients and their particular projects.

Travel: Requires some travel to bring patients from wards to the department.

Vision: At least travel vision seems required to perform the above duty safely.

Education and Training: Both had some college training.

Compensation: \$205 to \$360 monthly.

Ambulance Attendant 355.878 (2, M, ages 19-30, vision varied from travel to limited reading)

Job Description: In most cities across the nation, a person in distress need only lift the phone to call for an ambulance. Ambulance service is provided by fire companies, police departments, and hospitals. Each ambulance is operated by a driver with at least one attendant. The duties of the attendant include accompanying the driver on emergency calls, removing the stretcher from the ambulance, carrying the patient into the ambulance with the aid of the driver, and, if needed, administering first aid or oxygen, and preparing splints. He may also be responsible for the cleaning and general care of the ambulance, for seeing that supplies are replenished after each use, and possibly for keeping some record of the service rendered.

The attendant is a man of decision, upon whose actions a life may at times depend. His observation of the patient, and particularly observation of changes en route, tells the driver whether this is an emergency in which greatest speed is urgent; his observation may determine whether or not oxygen is given. A sense of the important contribution they make in serving others somewhat compensates for the limited economic rewards characteristic of this job.

Employers: An ambulance service company and a fire company.

Hours: 40 to 45 hours per week; may be on call for emergencies at any time.

Assistance—Supervision: Both interviewees required assistance in reading street numbers; this became the responsibility of the driver. No extra supervisory responsibility was involved.

Equipment, Adaptations, Records: First aid equipment, stretchers, oxygen equipment, and splints, etc. No adaptations reported. One person kept a record of calls made, using conventional methods.

Travel: Mobility in strange places is important in reaching and carrying the patient.

Vision: Adequate vision for the above mobility and the safe handling of an ill person is imperative.

Education and Training: One interviewee had a high school diploma, the other had eighth grade education. On-the-job training was important and both felt that it took some time to become proficient since new emergencies were constantly met.

Compensation: \$135 to \$160 per month.

Orderly, Nurse's Aid (General and Central Supply) 355.878 (19, MF, ages 21-61, two totally blind, three travel vision, 14 can do some reading)

Job Description: In order to provide required services, hospital and nursing homes must employ orderlies and aids to assist nurses in handling patients and to perform other duties necessary to the maintenance of the institution. The activities of these persons include bathing, shaving, feeding, and dressing patients who are unable to do this themselves; cleaning rooms and corridors; changing bed linens and collecting soiled linens; transporting patients to hospital areas; giving enemas; assisting physicians in putting on casts and braces; maintaining certain types of supplies and equipment such as anesthetics and hospital clothing for the physicians; and maintaining various progress charts on each patient. Interviewees employed as orderlies or nurses' aids reported no visual difficulty in performing most of their required duties; about half of them, however, were not required to maintain the various patient charts. All of these persons had at least travel vision and reported that they performed their jobs much as did their sighted co-workers.

Three interviewees classified as nurses' aids or attendants worked only in their hospitals' central supply facility and another spent part-time there. They maintained and inspected linen supplies; prepared instruments for the sterilizer such as syringes, needles, thermometers

and gloves; prepared and issued dressing packs, bandages, wraps, treatment trays, and other supplies; and washed glasses and similar dinner utensils. They did not operate the sterilizer, since it required reading a thermometer and a timer. Except for this, they performed all duties required of the job. Two of the three, who were totally blind had memorized the location of the various items and areas of the supply facility and performed their duties by touch. All reported that they performed exactly as the sighted except when they received assistance from fellow employees in locating misplaced supplies.

Long hours and low pay seem to prevail in this job classification. Yet almost all the interviewees reported liking their jobs very much. They found their work extremely satisfying because of the comfort and aid which they provide to the sick and elderly. This appears to outweigh any factor of compensation or hours.

Employers: Thirteen were employed at hospitals or medical centers and five were employed in nursing homes.

Hours: 40 to 56 hours per week. Overtime may be requested. Five to seven day week may be required.

Assistance—Supervision: Assistance, which was provided by fellow employees, included reading thermometers and doctors' orders, and locating misplaced items. The blind worker does not seem to have represented a special supervisory responsibility, although one interviewee felt he received closer supervision because of vision.

Equipment, Adaptation, Records: First-aid equipment, stretchers, thermometers, razors, mops, buckets, sponges, drying machines for gloves or glassware. No adaptations reported.

Almost half of the interviewees kept no records. Those required to do so kept bath charts, meal charts, liquid charts, and medicine and temperature charts. These were kept by conventional means and no difficulties were encountered, since these jobs were held by individuals with some reading vision.

Travel: On-the-job travel was required for those persons who were nurses' aides or orderlies, but no problems were reported since all had travel vision. Three persons with less vision were supply orderlies and their only requirement was travel to and from place of employment.

Vision: Totally blind persons are successful in central supply departments. Jobs which require taking patients from place to place in the hospital or require maintaining charts require vision adequate to these tasks.

Education and Training: Over half of this group did not have high school diplomas. Several, however, had attended or graduated from college (this was not required for the job). Almost all received

on-the-job training and felt that this was the best possible preparation they could have received. Proficiency was reported achieved in from a few weeks to a year.

Compensation: Ranged from \$130 to \$330 per month.

Kennelman 356.874 (1, M, 54, can do limited reading)

Job Description: Are you fond of animals? Perhaps you would like to work with a veterinarian, helping especially in the care of dogs, but sometimes helping the doctor in all aspects of his work, including work with other animals.

The kennel master is responsible not only for the animals—animals under treatment at the veterinary hospital and animals simply boarding there while their masters are away—but also for the kennel area. Since sanitation is important to health, especially when so many animals live in a small area, he cleans and washes down the floors every day, both in the hospital and in the runs where the animals exercise. Each morning he puts out fresh water, then prepares food and feeds his hungry charges. While the animals are in the “run” area for exercise, he cleans the kennels themselves.

During the day he assists the veterinarian in many ways as he treats the animals. He helps with making X-rays, holding the animals during treatment, may even assist with operations. Since he and his wife live at the hospital, they also answer the telephone and take general responsibility for the place. His wife also helps, at times, in maintaining records for animals under treatment. Distinguishing various kinds of food presents no problems since he can see colors and he comments that he can also tell one from the other by its odor. He has some contact with owners of animals, but not a great deal.

Employer: Veterinarian.

Hours: Since he lives at the place of employment, responsible for telephone or for meeting emergencies at any hour. Actual care of kennels and feeding of animals requires only a couple of hours each morning and again each afternoon.

Assistance—Supervision: Wife assists in record-keeping, may answer telephone, accept payments from customers. In summer, when the kennel is very busy because vacationers leave their pets to board, a girl is employed to assist in the heavier work load. Works constantly with the veterinarian on everything other than routine care of kennels; with this latter he needs little supervision.

Equipment, Adaptation, Records: Assists in use of X-ray machine and other medical equipment. Regularly uses ordinary cleaning equipment to care for kennels and runs. Keeps some records of medica-

tion, with aid of wife. Keeps informal account of dog food and decides when to order more.

Travel: Good mobility within work area, but no other travel required.

Vision: Has travel vision, good object perception.

Education: High school graduate, but it is not clear that this is required.

Compensation: \$160 per month plus apartment.

Locker Room or Game Room Supervisor 358.878, 341.368 (2, M, ages 28-34, both able to do limited reading)

Job Description: At once the guardians of property and the people who help others enjoy recreation and health activities, locker and game room supervisors must be responsible and friendly people.

In a "Y" or club, someone must be available near the health equipment, squash and handball courts, or pool, to give out towels, sell gym clothes, assign lockers, reserve courts for games, and take care of valuables which customers wish to check. In a college or university, the game room is supervised by a person who assigns pool tables, card tables, chess and checker sets, and similar equipment. Both of these supervisors collect some fees, and may from time to time have to enforce rules and regulations to keep boisterous customers from annoying others. It is usually necessary to keep some records, such as notations of locker assignments, records of how long equipment is used and by whom, and records of fees paid.

The job may also include other public relations activities designed to encourage use of the health equipment or game room. Frequently, minor repairs to equipment, such as retipping cue sticks, may be part of the job. It is important to have a personality which is at once pleasing and likely to win respect so that enforcement of regulations will be easily accomplished.

Employers: A YMCA and a university recreation facility.

Hours: Roughly 35 hours per week, may vary with season.

Assistance—Supervision: In one case, the supervisor gives minor assistance in record keeping.

Equipment, Adaptations, Records: Clock which stamps time of checking customers in and out, simple tools such as sander, file and clamps to aid in minor repairs. In a sense, responsible for all equipment, game tables, etc., as a guard.

Travel: Mobility throughout the working area is important.

Vision: Both were able to do limited reading.

Education and Training: One is a high school graduate, the other a college graduate, but the essential requirement appears to be a minimum of record-keeping skills and good ability to handle the public.

Compensation: \$220 to \$384 per month.

Housemother—Nursery School Aid 359.878 (2, F, both aged 20, vision: both had limited reading)

Job Description: A rewarding job for many persons involves supervising or teaching the youth of our nation. One of the interviewees supervised two blind and deaf mentally retarded children at a state residence school for the blind and the other person was an aid or supervisor at a day nursery school.

The activities of both persons were similar in all respects except that the residence school supervisor slept in three nights a week and was responsible for waking, dressing, washing, and serving breakfast to her charges. These duties were in addition to those which were similar to the nursery day school supervisor which included serving lunch, supervising play activities, directing afternoon naps, escorting children to other school facilities, such as the swimming pool, helping the children into and out of their outdoor clothing and aiding them with toileting.

Both interviewees reported that their performance was somewhat slower than that of a sighted person. They could not supervise by watching the children as a group, but had to relate to the children as individuals. One of the interviewees reported that she could do no sewing for the children, since she could not see enough to thread a needle. On occasions when it was necessary to replace a button on a child's coat, fellow employees provided her with assistance. Both interviewees liked their jobs very much and got a great deal of satisfaction out of working with and helping children.

Employers: One was employed at a nursery day school and the other at a residential state school for the blind.

Hours: 28 to 40 per week. The interviewee employed at the state school for the blind was required to sleep in three nights a week and also to be on duty one weekend a month.

Assistance and Supervision: Occasionally the interviewees received assistance from fellow workers when taking the children swimming, doing occasional mending, and spotting children who got into mischief. No additional supervision was provided because of visual handicap.

Equipment, Adaptations, Records: Ordinary household equipment was used without adaptation. No records were kept by the interviewees.

Travel: There is a need for good mobility in familiar areas, but no problems were reported since both interviewees had travel vision.

Vision: Sufficient vision is necessary to handle the supervision of active children.

Education and Training: Both interviewees had high school diplomas and one had taken a physical therapy course. Both received on-the-job training and felt proficient within six to eight weeks.

Compensation: \$125 to \$175 per month (both received \$1 per hour).

Presser (Valet) 363.782, 363.884 (2, M, ages 59-63, light perception and limited reading)

Job Description: Have you ever noticed how much better clothing looks, especially tailored clothing, when it receives truly professional pressing? That smoothness, that perfection of line which makes clothing look new is the work of a practiced hand, a real skill.

In one case running his own business as a clothes presser, in the other case working as valet in a large hotel, these men perform the pressing job itself in the same way. First, they evaluate the material from which the garment is made, to be sure to use the right temperature. Then they determine how to position the garment in order to press it most effectively and yet quickly. Then they proceed to the pressing itself. One, with very limited vision, feels that he cannot press pleated skirts without assistance, but apart from that special circumstance, both say that care, sensitive fingers, and concern for details aid in doing a good job. When the garment has been pressed, it must be hung neatly to retain its shape.

The man who has his own business keeps a card file for his customers and a book with a daily record. He does this by typing. The valet has a variety of additional duties: he goes around the hotel to pick up laundry and dry cleaning from guests, delivers these to the hotel's laundry, returns the pressed articles to their owners, makes out tickets for each article so guests can be billed for the service. He also keeps the pressing room neat. He reads the numbers on the hotel doors by touch since they are metal. He answers the telephone when guests call to request service. At times, he must take special care of valuable items or money which guests have left in the pockets of clothing sent for pressing. He has enough vision to read large, dark pencilled notations and keeps his records in this way.

Employers: Large hotel and self-employed.

Hours: The employee has a normal work week. The self-employed person does pressing part-time and assists his son with a service station the rest of the time.

Assistance—Supervision: Occasional assistance with reading may be necessary. The self-employed person must at times ask his wife's assistance in positioning an unusual garment. Little direct supervision is given.

Equipment, Adaptations, Records: Steam iron and commercial pressing equipment. No adaptations. Records are kept in heavy pencil or typed form, with occasional assistance.

Travel: One works in his home. The other must make frequent trips around a large hotel; good mobility in a familiar area is necessary.

Vision: Unless a garment is cut in an unfamiliar way, touch is adequate for the pressing job. If records are prepared for others, as in the hotel, some way must be found to make these legible.

Education and Training: Third to sixth grade education quite adequate. On-the-job training brief.

Compensation: Up to \$175 per month plus tips.

Shoe Repairman—Helper 365.381, 365.884 (2, M, ages 37-46, one totally blind and one able to do some reading)

Job Description: Although one of these men works for a shoe manufacturer and one is self-employed as a repairman, both perform a number of operations of a similar nature. They may clean shoes, rub them with a solution which permits the leather to stretch, remove worn or damaged parts, and replace such parts. Both are responsible for some care of machinery. One man repairs the racks on which shoes are carried down the conveyor belt during the manufacturing process: the racks have cardboard covers on them to protect the shoes from the rough wood, and these covers wear through and must be replaced. He also replaces wheels on the conveyor belt: he removes the nuts and bolts which hold the wheels, replaces the damaged wheel and tightens the nuts and bolts again.

These jobs involve some variety and some problem-solving. One of these men also has contacts with the public, which he enjoys. Neither job is a production job.

Employers: Shoe manufacturer and self-employed in own repair shop.

Hours: 42½ hours a week for the employee.

Assistance—Supervision: No special assistance is reported and supervision is not close.

Equipment, Adaptations, Records: Both use the conventional tools and equipment of the shoe repair or shoe manufacture trades, and the repairman has developed guides for several of his machines. Never-

theless, he feels that he has to work much more slowly than does a sighted repairman. His wife keeps the business records.

Travel: To and from the place of employment only; the repairman works in his home.

Vision: The repairman is totally blind. The employee can do some reading and it would appear that vision is useful to him, especially in cleaning operations.

Education and Training: The employee has only nine years of formal education and no special training for the present job. The repairman had two years of college and was trained in shoemaking as an apprentice.

Compensation: Employee makes \$1.25 per hour.

Watchman (Night) 372.868 (1, M, age 62, at least travel vision)

Job Description: When most persons go home after a day's work, the night watchman's "day" has just begun. If he arrives for work in the late afternoon, his first duty may be to station himself at the main exit in order to watch for any unusual packages carried by departing employees and which might contain property of the employer. After all the regular employees have left for the day, the night watchman begins periodic tours of the plant, office building, or institution and checks exit doors to make sure they are locked. He also may observe the building for possible fires and the parking lot and grounds for the presence of unauthorized persons. If any irregularity occurs, the watchman will telephone his supervisor or, if necessary, notify local or state authorities. Sometimes a watchman may be authorized to carry weapons and deputized to arrest intruders, or he may perform janitorial duties such as setting thermostatic controls or tending furnaces.

Employer: County government.

Hours: 36 hours per week.

Assistance—Supervision: The interviewee reported no need for assistance with his duties. There was also no report of any extra supervision of this person.

Equipment, Adaptations, Records: The interviewee used no tools or equipment and was not required to keep any records.

Travel: In addition to travel to and from place of employment, on-the-job mobility was required.

Vision: Vision necessary to see persons or objects at a small distance.

Education and Training: The ability to remember names and faces may be more important than formal education. The interviewee received on-the-job training and felt proficient within three weeks.

Compensation: This person received income to supplement his Social Security pension and, therefore, his income probably did not exceed \$150 per month.

Switchboard-Dispatcher 913.168 and/or 379.368 (5, MF, ages 30-66, varied from totally blind to some reading)

Job Description: Whether working for a police organization, state or local, or for a cab company, the switchboard operator-dispatcher can be sure of being in the center of activity—and often the center of excitement. The basic elements of the job involve accepting incoming calls through a small switchboard (for details of this activity see Switchboard Operator) and dispatching a police car or a cab to fill the caller's request. However, even this basic activity requires a good knowledge of the geographical area covered, the streets of a city, or the roads of a township. It is necessary to know roughly the time required to get from one point to another; and when several pick-ups are required of one cab, a good sense of direction is important. With radio cabs, it is also vital to have a good memory so that the dispatcher knows pretty much where each cab is at a given moment and can assign the one most advantageously located to the new caller. The switchboard operator in this kind of an organization is also asked many questions which may not seem directly related to the dispatcher's duties, and so this spot becomes something of a general information and public relations center.

Pressure can come from two sources. First, there are the times that are just plain busy. One interviewee reported, for example, that during a bus strike he had handled one hundred seventy-two cab orders in one hour. Since this represents roughly three calls per minute, he was a busy man! The other source of pressure comes when the caller indicates that there is a crisis, someone very ill, an accident, possibly a call for an ambulance. Life itself may depend upon the wise handling of such calls by the dispatcher.

In all of these jobs, it was necessary for the operator-dispatcher to keep a record of every call, to have some way of indicating every place to which a police car or cab was sent. If the original record was made in braille, it must subsequently be typed during breaks between calls. In order to achieve speed, one dispatcher noted his calls on the typewriter which he had fitted with a roll of adding machine paper on a bar attached to the back of the typewriter. There was also a tear bar on the roll. Thus, he simply typed each order, tore it off, and sent it on its way. Since he had to number the orders by the hour, he made up braille slips numbered from one to a

hundred, and each time he gave an order he used the number on the topmost slip, then passed that into another box to be re-used again the next hour; thus, he never made the error of incorrectly numbering his order slips. Other workers adapted to their visual problem through the use of crayon which both they and the drivers could read. Our interviewees comment that accuracy is extremely important. The operator must make sure that he understands exactly where the caller wants to be picked up, must get the address with great accuracy, and record it with similar accuracy. Sometimes people have accents or for some other reason are difficult to understand over the phone and the operator must be quite patient with them. One interviewee observed that in moments of pressure, the job can involve a great deal of tension.

Dispatchers in police departments often have additional duties including accepting and sending teletype records, giving information to police agencies in neighboring states, facilitating action in times of emergency. One operator-dispatcher also could receive and send telegraphed messages. One police department employee had his telephone and radio equipment in his home, and it was his job to cover calls during hours when the regular office in the City Hall was closed, that is, at night and over the weekends and holidays.

Employers: Cab companies and police departments.

Hours: The usual hours are from 40 to 60 on at least a five and a half day per week basis. The hours of the worker who took the calls when the regular City Hall was closed were, of course, very much longer, but the pressure was generally less.

Assistance—Supervision: Occasional assistance was needed in reading and filing, particularly on the job where the teletype was used. This assistance was provided by fellow employees. All of these interviewees seemed to have worked with very little supervision once they were familiar with their job so that the blindness of the worker does not seem to add materially to the supervisor's burden.

Equipment, Adaptation, Records: Headset telephones, the switchboard, teletype, two-way radio, and typewriter were all used with the only reported adaptation the adjustment of the switchboard for use of a blind person. The braille watch for timing, and slate and stylus for record-keeping were used by several. Records of calls and occasional other records are required and were handled either by conventional methods for those having some vision or by typing.

Travel: To and from the job only.

Vision: Totally blind persons were successful in this work.

Education and Training: Completion of high school was the typical education for our interview group. A specific knowledge of the

streets or roads of the area, ability to coordinate a number of activities under some pressure, and ability to deal with the public are important qualifications. On-the-job training is customary, although a command of the switchboard and, of course, of the record-keeping skills is important before entering the job. The greatest length of time reported to achieve efficiency was one year.

Compensation: Ranged from \$180 to \$375 per month for full time employment.

Janitor-Custodian 382.884 (30, MF [29M, 1F] ages 24-69, totally blind to driving vision)

Job Description: The buildings and grounds of schools, hospitals, churches, office buildings, and manufacturing plants must be maintained in an orderly fashion for employees and visitors alike. The responsibility for this falls on the shoulders of janitors and custodians. It is their job to sweep, scrub, mop, wax and buff hallway, office and plant floors. In addition, windows must be kept clean and bright, furniture must be kept free of dust, and floors must be kept free of papers and debris. Grounds, also, must be maintained, lawns must be mowed, and trees and shrubs pruned throughout the spring and summer. In the fall, raking leaves is necessary, and throughout the winter, walkways and parking lots must be cleared of snow and ice.

The interviewees used a variety of the usual tools and equipment to perform their duties. There were no adaptations to any tools or equipment as used by the interviewees (see Equipment). Many of those who were unable to see clearly whether or not an area was clean relied successfully upon their sense of touch to feel for accumulations of dirt. Mechanical ability was applied when simple repairs were needed, and several used magnifying glasses to aid them with close work.

Comfortable working temperatures must, at all times, be maintained and many interviewees were responsible for maintaining heating and boiler room facilities. All heating and cooling equipment was automatically operated by setting the thermostat to the desired temperature.

Most interviewees felt that they performed as sighted persons. Some, however, were prohibited from using certain power equipment such as lawnmowers, drills, scrubbers and snow plows, and thus, did not perform all the duties usually required of sighted custodians. One person compensated for his visual disability when mowing the lawn by performing the task only in the early morning or late afternoon to take advantage of the shadow cast by uncut grass in order to distinguish it from that part already mowed. A few interviewees supervised from one to five other custodians and found no problems in doing so.

Employers: Ten persons were employed by private business (manufacturing, etc.); seven by various levels of government and branches of the armed forces; four by public and private school systems; five by hospitals; two by public service organizations (Y.M.C.A., etc.); and two by religious organizations.

Hours: Twenty-seven persons ranged between 40 and 55 hours per week. One person worked full time (40 hours) in the summers only, and two persons worked part time from 12 to 18 hours per week.

Assistance—Supervision: Only two persons received assistance; one from his daughter and the other from fellow employees. This assistance involved moving and straightening furniture. Several others were restricted in their use of certain power equipment such as lawnmowers and drills. Supervision was normal. A few interviewees supervised other custodians and reported no problems.

Equipment, Adaptations, Records: Equipment included janitorial supplies such as mops, buckets, brooms, etc.; simple repair tools such as hammers, saws, pliers, etc.; powered maintenance equipment such as waxers, buffers, scrubbers, etc.; and lawn care equipment such as manual and powered mowers and lawn sweepers. There were no adaptations reported to any equipment. A few persons, however, reported the use of magnifying glasses when doing close repair work. Eight persons reported keeping records, all of them by conventional means. These involved recording the number of hours worked, manually or by use of a time clock; descriptions of how working time was spent; notations showing the use of equipment; and in one case, recording the chlorine content and PH factor of a swimming pool.

Travel: In addition to travel to and from place of employment, on-the-job mobility was required.

Vision: A totally blind worker was successful, although his duties were limited to sweeping floors and hallways.

Education and Training: On-the-job training, mechanical ability and custodial experience appear to be more important than formal education. Most of the interviewees either had on-the-job training or past experience, and all of them felt proficient in their jobs within six months.

Compensation: Ranged from \$145 to \$480 per month.

Elevator Operator 388.868 (7, MF, ages 22-77, vision varies from limited reading to reading)

Job Description: Have you ever considered what the world would be like without elevators or how many thousands of people from all

walks of life use them each day? The job of an elevator operator therefore requires a person who generally enjoys people and helping them to save time and energy.

The job of all but two interviewees consists of transporting people to the various floors in the building. In a manual elevator the operator would push the button of the desired floor and after arriving at the floor would level the elevator by matching the door handle up with a leveling device such as a piece of masking tape. One interviewee reported that his elevator stops at the right level if it comes within twelve inches of the floor. In an automatic elevator, which could not be run by a totally blind person, the operator would receive signals from a board with numbers which would light up and then he would press the button for that particular floor. In this type of elevator there would be an automatic leveling capacity.

One interviewee transports mail in an automatic elevator and another person runs a cable hand-operated elevator which carries freight on skids. This operator is notified that he is wanted on a floor by a buzzer which registers on a panel. He moves control levers, cables or other devices which control movement and when he arrives at the correct floor someone else will take the skid to its destination.

The elevator operator may be assigned various other duties such as, turning in lost articles, acting as an usher to strangers coming into the building, or scrubbing the elevator occasionally. One interviewee assumes clerical duties in the maintenance office early in the morning.

In most cases success in this job makes it almost essential to become familiar with the various people, their voices, and the places they go, for not recognizing them and taking them out of their way causes inconvenience. It is important not to miss any people who are waiting and not to close the doors until each person has completely entered the elevator. Thus, the basic requirements are to have a pleasing disposition, to be cheerful and to act responsibly in contacts with people.

Employers: City and state buildings, hospital, hotel, college, and manufacturing organization.

Hours: 40-48 hours per week.

Assistance—Supervision: There is very little if any supervision. All worked relatively independently and knew how they were doing only when they were either complimented or at least received no unfavorable reports from passengers.

Equipment, Adaptations, Records: All elevators were automatic, manual or cable hand-operated. One interviewee painted the handle of an all bronze elevator door white in order to make a contrast, and sev-

eral manual elevator operators used a piece of masking tape as a leveling device. A possible addition to the elevator might be a very bright light enabling the operator to see the floor number and recognize the people better. Only one person kept a record (on small cards kept in his pocket) of the people who ride his elevator each day.

Travel: To and from the job only.

Vision: All interviewees had at least limited reading vision.

Education and Training: Formal education does not appear necessary for job success. All mentioned only limited on-the-job training.

Compensation: \$30-\$78 per week.

Metal Cleaner, Immersion 503.885 (4, M, ages 36-56, vision varies from totally blind to limited reading)

Job Description: Cast or machined parts need various operations of cleaning and polishing before they can be used. Therefore, the metal cleaner plays an important part in factories which make machine parts, such as valves, bearings, or tappets, for shipment to other companies which use them in finished assemblies of a wide variety of products.

One of the cleaning methods is to soak the metal part in various solutions which remove dirt, metal chips, or grease. In some cases, the parts must then be heat dried by blowing them with air under pressure; in other cases, the parts may be spread out to dry.

There are various machines to clean the parts, depending on the size and shape of the item manufactured. When the parts are large or heavy, a hoist may be used to lift the parts and dip them into cleaning solution. The parts may be mounted on an arbor (or post), which is then swirled and brushed automatically in a machine resembling a washing machine. The process differs, but the desired result is the same.

The worker is part of a team, and is often working where material is brought to him by an assembly line or conveyor system. Depending on the size of the item, physical strength may or may not be essential.

Employers: Manufacturers of various cast or machined metal parts.

Hours: 40 to 48 hours per week.

Assistance—Supervision: Supervision is routinely furnished by a foreman to both sighted and non-sighted workers. In all cases, the routine manufacturing process called for an inspection department which succeeded the cleaning of the metal parts. Two workers noted

informal assistance by the foreman or by co-workers for reading tickets on job lots, or for seeing numbers on various valves.

Equipment, Adaptations, Records: All employees use some sort of washing machine which is filled with a variety of cleaning fluids or compounds. An air gun to dry the washed parts may be used. Various hand tools, such as pliers and wrenches, were mentioned occasionally. No particular adaptations were required, even in the cases where the worker was totally blind. This work did not require the men to keep any records.

Travel: To and from the place of employment.

Vision: Totally blind persons are successful in this type of work.

Education and Training: All interviewees had graduated from high school, but ability to operate machinery safely is as important as academic background. All also received on-the-job training in the operation of their particular machines.

Compensation: Ranged from \$80 to \$108 per week.

Bonder, metal 518.885 (1, M, 21, limited reading)

Job Description: If you enjoy having a part in activities characteristic of technical advancement, if you like to feel that you are one of the first to learn and do a certain kind of work, seek employment in one of the many industries which constantly experiment with new processes and procedures.

An example of such work is the process of fabricating metal by bonding instead of riveting. Our interviewee worked in the aircraft industry but the process may be found in others. In the making of a helicopter, 76 different assemblages are done by the bonding process. The parts for each assemblage are prefabricated so when he starts work he gets the parts for each assemblage he is to work on that day, puts them in a cart, and rolls the cart to the cleaning room. From this point on he handles the parts only with gloves since chemicals and high temperatures are characteristic of this process.

He puts his parts through a degreaser, an alcholide, and two rinses, then a sulphuric acid climate and two rinses, a blastoff process, and a dryer. Then he puts them together by putting a honeycomb-like core between the pieces. It then goes through the bonder, and finally it is baked for an hour at 350 degrees, this latter being done while it is vacuum packed in a plastic bag.

The parts involved are light and easily carried, and the entire process is handled very independently except that if the worker believes the cleaners are contaminated he calls the inspector who may

close the cleaner down for special attention because it can no longer do its work effectively.

This work requires great care in handling the parts, great accuracy in observing the procedures for the complex process.

Employer: Manufacturer where metal parts are involved.

Hours: 40 hours per week.

Assistance—Supervision: Works quite independently and without assistance or special supervision.

Equipment, Adaptations, Records: Uses the above highly specialized equipment without adaptation. No records.

Travel: Within limited work area.

Vision: Believes object vision at least necessary to efficiency.

Education and Training: He is a high school graduate. Essential training given on the job.

Compensation: \$112 weekly.

Meat Processing and Distribution

Meat Boner

Meat Stuffer

Frankfurter Skinner

Poultry Processor

Poultry Packer

Buyer and Order Filler

525.887, 520.885, 525.885, 920.887, 316.884, 922.887 (6, MF, ages 23-52, vision varies from totally blind to reading ink print)

Job Description: The meat and poultry packing industry offers excellent employment opportunities since much of the work is broken down into simple work elements and since the work is not especially seasonal. The fact that the work elements are simple may make a lot of these jobs repetitious, but the stability of employment is a reward. With the exception of the last job described below, that of the buyer and order filler, none of these tasks requires previous training. Indeed, all are learned rather quickly on the job, and require chiefly manual dexterity and energy.

The *meat boner* simply cuts, off the bone, the “scrap” meat which is left after the steaks, roasts and more desirable cuts of beef have been removed. The meat is cut off with a very sharp knife, like a razor; the knife actually shaves the meat off to get the bone quite clean. This “scrap” meat is made into hamburger, and it is usually rib meat, although some ground beef is made from other parts of the carcass. The worker also grinds the meat, using a machine, a grinder, for this purpose. He must also keep his knife sharpened, using an emery band; he had to learn to hold his knife in just the right angle, or he would cut through this band. On occasion, he had to clean up his work space. While it is necessary to work quickly,

in order to meet production standards, it is also necessary to work carefully and to handle the knife well since there is obviously danger of being cut.

The *meat stuffer* uses a machine which pressure fills bags with meat. Usually, two workers function as a team. They fill the stuffing machine which has a 500-pound capacity, close it and turn on air pressure. Then a piston forces the meat out a nozzle into bags, automatically weighing the meat at the same time. One member of the working team manages the stuffer, and hands each filled bag to the other team member who clips it shut. This job requires a good bit of physical strength and fairly good dexterity.

The *frankfurter skinner* may do her work with a machine or by hand. If a machine is used, the worker simply puts a long string of "hot dogs," still in the casings in which they are made, into the machine, presses a knob, and the machine cuts the links and removes the skins. As they come out on a belt, a girl on one side removes the "dogs" and boxes them, while a girl on the other side removes the casings and waste into a container. When doing the skinning by hand, she pulls the stuffed links toward her, and grasping each link in her left hand, she uses her right hand to cut each casing with a dull knife, then removes it. She uses a twisting motion to ease the frankfurter out of its casing and must be careful, in using her knife, not to pierce the body of the frankfurter. Sometimes she makes boxes. A flat bundle of waxed paperboard boxes comes to her and she has to fold them, hook the sides together, and pile them, ten high, in the work space ready for filling. Occasionally, she assists in packing other processed meats, using similar procedures.

The *poultry processor* works for a company which processes about 16,000 chickens daily, some going directly into the retail market and many going into frozen chicken pies or TV dinners. This man's job requires only that he strip the necks of the poultry. The pinfeathers have all been removed before he gets the chickens. He has only to cut the skin at the neck and pull it loose, using his fingers; he does not actually remove the skin since that is part of a later operation.

The *poultry packer* works only with drumsticks and wings. The parts are brought to the work space in dishpans. She may sometimes use a boning knife to clean them further, but usually they are ready for packing. She places the drumsticks in the package with the thick ends alternating left and right, to use the package space most efficiently. Wings must be tucked under. The number going into each package depends upon the size of the pieces. The completed packages then go into the freezer. Sometimes she is asked to do other jobs, such as putting labels on the boxes or putting giblets into bags.

The *buyer and order filler* works for a company which provides food and groceries to offshore drilling rig installations. His work is done in the wholesale department, actually a warehouse. He must keep track of their inventory of groceries, order needed supplies to maintain that inventory, and fill orders to go out. Although he can do some reading, he keeps prices in his head so that he rarely has to refer to the posted list. He may accept deliveries of groceries, place them on the proper shelves, and keep the related records. Occasionally, he accompanies a driver making a delivery, to some extent supervising the delivery.

Employers: Food processors and distributors.

Hours: Usually 40 hours per week, but there may be overtime up to 65 hours at times.

Assistance—Supervision: It is rare for any of these workers to require assistance, but most of them work under rather close supervision, in working teams which do highly repetitive parts of an overall processing operation.

Equipment, Adaptations, Records: Knives; grinding, stuffing, and skinning machines. Only the buyer and order filler keeps records, and he uses conventional means to do so.

Travel: To and from the place of employment only, except for the occasional supervision of a delivery.

Vision: The frankfurter skinner and poultry processor use no vision in their jobs. The other workers have some vision and indicate that from the point of view of speed, this vision is helpful.

Education and Training: Except for the buyer and order filler, who is a high school graduate, formal education seems unimportant to these jobs. All received on-the-job training, and found it adequate to meet production standards within very short periods of time.

Compensation: \$1.30 to \$2.43 per hour.

Bakery Workers

Pan Greaser
Pan Washer
Baker

Baker's Helper
Assistant Manager, Bakery
Donut Maker

526.886, 526.781, 529.886, 526.130 (7, M, ages 20-59, travel vision to some reading)

Job Description: Do you want to work amid odors that are sweet, tastes that are delicious, and make a product which is popular in all seasons? Then, consider a job in a bakery. Some of these jobs are

very routine, some are challenging, some give the opportunity for some creative work, and most provide an opportunity to learn and advance.

Simplest among these jobs is that of the pan greaser who first prepares the grease by heating it enough so that it will easily get into the corners of the pans. Then, using a cloth saturated in grease, he prepares the pans for the baker—sheet pans, Parker House pans, raisin bread pans, coffee ring pans. When the greasing is finished, he puts paper liners in other pans of several sizes. He puts the pans on a truck, piling them higher than he is tall, sometimes as many as fifty truckloads a day. This job requires energy, moderate speed, and resistance to monotony.

At the other end of the production line is the pan washer. He runs the used pans through a huge washer, about four feet wide and thirty feet long, which automatically washes, rinses, and dries them. Two men are required to run this machine, one to start the pans through and one to take them off the finished end. He must also keep the work area clean and neat. Here again, energy and resistance to fatigue and monotony are important.

The baker himself, is, of course, the master among these workers. Gradually learning through ten years in a large commercial bakery, this man now is the baker at a motel. During the busy season, he will make 2500 soft rolls a day, plus 200 Danish rolls, about 30 pies, and a few cakes. All this he does without assistance except in the cleaning up. His skill has been achieved through on-the-job training and long experience, and he is not only master of the baking craft, but a good manager of his time, capable of planning, organizing his materials, watching his inventory, and ordering. In short, he is not only a master baker, but a good manager.

Two of our interviewees are assistant managers in larger commercial bakeries. They keep other workers supplied with the necessary materials, watch over the scheduling so work keeps coming through without delay, check the ovens and other equipment to keep all in exact working order, watch the quality of the products and order adjustments when they are not satisfied with this quality. They may order needed supplies, supervise the stockroom, and generally maintain the established routine of the bakery. These men are, then, chiefly managers, although they have some of the baker's skills and may, at times, fill in where needed. They do not have to be able to do well all the kinds of work they supervise, but must know how to direct and organize the skills of other workers who may be specialists in certain baked products. They keep some records of both a production and a personnel nature, set standards, and keep the bakery team working at an effective level.

Another interviewee, still quite young, describes himself as a baker's helper. He helps anyone in the bakery who happens to need

aid at the moment; works on the fryers; mixes the doughs, cremes, glaze, and chocolate; pans the buns and ices them. He also takes care of sanitation by removing trash, wiping racks, cleaning out the proof boxes where certain products are prepared for baking. He is allowed only to do rather unskilled jobs, but he has a rich opportunity to learn everyone's work and to advance.

The specialist of this group is the donut maker. He starts his day by taking the donut mix from the bag, mixing it with water, forming the dough, and putting it inside to rise. Then he rolls the dough, cuts it into donut shapes, proofs it, fires and glazes the donuts. He does all this in a glass enclosed shop within the view of the public all day, and on the less busy days, he also sells his product to the customers. On busy days, a boy helps with this. In short, he pretty much manages the place. A good bit of skill is necessary to make a superior product. The dough must be rolled to just the right thickness, just the right amount of moisture must be removed in the proofing operation, and frying must be done at the right temperature. He uses a deep fryer which contains a very large quantity of grease and this must be changed once a week and filtered every other day. He is, of course, also responsible for the cash taken in by the shop. He is free to make any shape or type of donuts that he thinks will sell—and frankly hopes he will some day own the shop!

Employers: Commercial bakeries, a motel, a donut shop.

Hours: Hours tend to be long; a ten-hour day is not unusual; while 50, 55, and even 60-hour weeks are reported.

Assistance—Supervision: The pan greaser has to have someone read the orders to him so he knows how many pans to grease. Four others keep records or make orders, but have enough vision to do this by standard means. Supervisors do not appear to carry special responsibility for these men.

Equipment, Adaptations, Records: Use all forms of standard bakery equipment required by the jobs as described. No special adaptations were reported. All but the first two men described must do some checking of indicators, gauges, etc. and have sufficient vision to do this, sometimes with the use of visual aids. Four keep records and have sufficient vision to handle these in the standard way.

Travel: All require good mobility in the bakery area, must be able to avoid trucks loaded with pans, etc.

Vision: The pan greaser and pan washer need, and have, little more than object vision. All the others function visually in relation to reading indicators, keeping production or personnel records, ordering, listing things to be done, etc.

Education and Training: The pan washer and pan greaser have roughly sixth grade education. All others are high school graduates. All have on-the-job training and state that this is absolutely necessary, and, for the more complex jobs, it continued over some years to their present proficiency.

Compensation: \$50 to \$110 a week plus overtime.

Container Washer, Machine 529.885 (3, MF, ages 25-63, one totally blind, one with travel vision, one able to do some reading)

Job Description: In a hospital, or in any preparation of equipment for medical use, the highest degree of cleanliness is necessary. Achievement of such cleanliness can become an area of job specialization requiring skills and a high level of responsibility.

Two interviewees specialize in the cleaning of pipettes, pencil-shaped glass vessels used by chemists, druggists, laboratory technicians, and other medical staff. The worker receives the dirty pipettes on trays which are brought to his work area. Often the pipettes have cotton in them, and his first procedure is to blow out this cotton. Then he puts them into racks, according to their size, and runs them through a washer with distilled hot water. For some types of use, this results in adequate cleaning. The worker may hold each one up to a strong light at this point to be sure they are clean, and may run a wire through them if any foreign matter is visible. If this initial water bath has not cleaned the pipettes completely—or, for some uses, even if they do appear clean—they are next put into a sulfuric acid bath overnight. In the morning, they are rinsed, stuffed with just the right amount of sterilized cotton, and placed in racks ready for use.

One of these workers also cleans test tubes and other glassware for the chemistry, hematology and pathology labs. Some of this involves washing by hand and using touch to determine whether the glassware is clean and dry. This worker, at times, also keeps the cabinets for medical instruments clean, and she may keep the linen closet supplied in the physicians' offices. She must use vision at times in order to handle these items deftly and, with the aid of a strong light, she must check the cleanliness of the inside of small vessels visually.

A third worker is occupied chiefly with preparing bottles for washing. These bottles come, in large numbers, from three other hospitals to a central point where they have a special washing machine to do this work. Our interviewee removes the caps from the used bottles, using a "capper" which fits around the lids if necessary. Then he places the bottles into racks, being careful not to mix bottles used with different solutions in the same rack. He puts three of these racks on a small truck by which they are carried to the

washer and sterilizer. He arranges the caps in a box; a woman takes these away and washes them by hand. After the bottles have been washed and have gone through the sterilizer, they go on an assembly line to be filled and capped again. At times, this worker assists with this process, especially in sealing the filled bottles. He also keeps a record of the bottles sent out to the other hospitals. Although this job requires some deftness and speed in handling the bottles, it also requires the ability to sort by solution and responsible handling of these items.

Employers: Hospitals and pharmaceutical firms.

Hours: 40 to 45 hours per week.

Assistance—Supervision: No assistance or special supervision reported.

Equipment, Adaptations, Records: Use various equipment for cleaning, washing, sterilizing, including automatic washing equipment. Two of these workers keep records on the amount of glassware, etc, handled each day.

Travel: Good mobility in the hospital area is required.

Vision: The two workers responsible for pipettes and similar glassware require enough vision to inspect the inside of vessels visually.

Education and Training: These workers have seventh to twelfth grade education. The chief training appears to be on the job.

Compensation: \$55 to \$108 per week.

Dairy Products Worker 529.836 (2, M, ages 31-33, both can read ink print)

Job Description: The "most perfect food," milk, requires a good bit of processing before it reaches the public. This work has the advantage of being done under very clean and sanitary conditions, and of being fairly free from seasonal variations and layoffs.

One worker starts by pumping the milk, which comes into the dairy in milk trucks, into vats. Here, it is sterilized. He must watch the temperatures and the timing of this pasturizing process which requires heat at about 162 degrees for 15 seconds. Then the milk is put through a cooling system. This worker must test and taste the milk to be sure it is good, not curdled, not tainted with the taste of garlic which can be particularly troublesome in the spring months. He is free to decide that a certain batch of milk is unsatisfactory and should not be used. He also carries some responsibility for cleanliness which is constantly checked by state milk inspectors who take bacteria counts.

Another employee works at the end of the dairy process; that is, he takes the milk from the conveyor, after it has been packaged, and puts it in the proper place for shipping. The packaging machine stacks the milk, five high, on the conveyor. The worker distinguishes the size and kind of milk carton—homogenized in cartons with green tops, chocolate with brown tops, etc.—and sorts each into its proper storage place. He must also keep a record of how many crates of each type of carton come through. At times, he assists with loading trucks, dumping surplus and returned milk, and with getting special orders for customers who come to the warehouse occasionally. This job requires a good bit of physical strength to move heavy crates filled with milk.

Employers: Dairies.

Hours: 46 to 54 hours a week.

Assistance—Supervision: Assistance is required only if the worker cannot locate needed equipment, which occurs occasionally. Both workers have been in their jobs for some years and supervisors contact them only if something goes wrong.

Equipment, Adaptations, Records: Use standard dairy equipment without adaptation. One worker keeps what are essentially department production records.

Travel: Good mobility in the work area is required.

Vision: Both workers use some vision: One must read temperature dials and use a timing device, and the other identifies cartons by color.

Education and Training: Both are high school graduates, but on-the-job preparation is important to the work.

Compensation: \$58 to \$100 per week.

Injection Molding Machine Operator 556.782 (1, M, 37, totally blind)

Job Description: Many articles in common use are made by injecting hot liquid or perhaps wax, into dies or molds which form the product. As soon as the material cools, it can be removed from the mold and there is the finished product! Quick, automatic, and therefore inexpensive, such a molding process can make rather complex and very attractive objects.

This process is also very much used to make parts, such as bases for intricate assemblies of electronic equipment. One worker makes such bases, of various sizes and kinds but sometimes weighing as much as ten or fifteen pounds. The material with which he works is hot wax. On each side of his machine is a box containing four

cylinders of hot wax; these cylinders are kept filled for him. When his machine requires a new supply of wax, he attaches a hook to one of the waiting cylinders and a hydraulic hoist swings the cylinder into position over his machine and drops it in place.

He makes a number of different bases and since he works near the women who use them, their supervisor will usually just tell him which type is running low so that he will switch to making some of them. He then chooses the correct die from among those he has at his work place and fits it into his machine, using clamps, bolts and handtools to do this. Then he lets enough hot wax run into the die to fill it. All he has to do is adjust the pressure and since he has no way of reading this on a gauge, he has learned to do it by how the die feels during the injection process; if it "gives" there is too much pressure. Then he removes the base and drops it into a tank of water to cool evenly so that it will not twist or crack. He usually leaves them in the water until he finishes a cylinder of wax since he has learned that this is long enough for the cooling process; then he removes them from the water and puts them in bins waiting for the next process. At this point of removing them from the water, he does a rough inspection. He has to be especially careful when removing the bases from the die or they will bend.

Employer: A precision casting company.

Hours: Regular work week.

Assistance—Supervision: Requires no assistance. Supervision is minor since the accuracy and speed of his work are indirectly checked as the material goes through the next process.

Equipment, Adaptations, Records: Uses injection molding machine without adaptation. Has learned to distinguish pressure by "feel," and times the cooling process by the natural rhythm of the job. No formal records although he says he keeps some count, for his own satisfaction, of how much he has done in a day.

Travel: To and from the place of employment only.

Vision: Totally blind.

Education and Training: Completed high school and it is not evident that this is required. Learned this work in a few days of on-the-job training.

Compensation: \$1.50 per hour.

Foam-Machine Operator 559.885 (1, M, 21, can read ink print)

Job Description: In recent years plastic foam has been increasingly in demand as an insulating material. Refrigerators, ice chests, and

jugs for maintaining liquids at cool temperatures, are often made with a space between their inner and outer walls, and that space is filled with plastic foam.

The material from which plastic foam is made originally looks and feels like sand. The worker puts it through a "cooker" to expand it. His cooker is about the size and shape of a large barrel. He turns on heat to make steam in the barrel and must watch valves to get the right amount of steam. He produces plastic foam pellets of different sizes and weights, depending on the amount of air, steam, and raw material he uses. When the gauges tell him that his cooker is ready, he feeds the thermoplastic resin raw materials onto the conveyor belt which carries them into the cooker where a beater, along with the air and steam, produces the foamy beads. The beads come out a hole at the top and are carried by suction into waiting bins. He works in a standing position but once he has it working correctly he can leave it, just checking its operation at regular intervals.

Meanwhile, he brings supplies to other workers and removes finished work, both from his own machine and from others. This means that he moves constantly between the stock or supply room and the shipping room. Sometimes he assists with maintaining the inventory.

Employer: Manufacturer of insulation materials.

Hours: Regular work week.

Assistance—Supervision: Requires no assistance and little supervision.

Equipment, Adaptations, Records: Uses foam machine without adaptation. Maintains inventory records by conventional means.

Travel: Moves constantly about the building, including stockroom and shipping room.

Vision: Can do brief reading of ink print and states this would be necessary to check gauges on the machine and to do inventory work.

Education and Training: High school graduate.

Compensation: \$1.50 per hour.

Ready-Mix Concrete—Owner-Manager 570.132 (1, M, 53, object perception)

Job Description: After some years of experience in the construction field, this man started his own ready-mix concrete business, supplying concrete to contractors. He has his own sand and gravel pits, his own concrete mixing plant, his own trucks. With some assistance from his wife, he supervises the men who work in the pits, mix the concrete, and drive the trucks. To a large extent, however, he

leaves the direct supervision to an assistant. This leaves him free to spend much of his time in customer contacts, selling his service, estimating, making sure that customers are satisfied with the service.

He enjoys reviewing the condition of his plant and trucks, likes personally to buy most of the materials needed, including new trucks and major equipment. Although he has to have someone drive him about, he likes to visit the jobs where his concrete is being delivered, wants to make sure it is arriving as needed, and see how the job is going. He has one of his truck drivers pick him up at his home somewhere between five and six-thirty every morning, is right out on the job with his men. He believes that this active kind of involvement makes for the best business, even though he must often depend upon the vision of assistants.

Obviously, this is a business where a good bit of practical experience and know-how are important. It might not be a wise choice of career for someone who did not have, as this man does, years of experience in the construction field; indeed, he started in this concrete-mix business before his visual loss occurred. Nevertheless, it seemed worth while to describe his business, at least briefly, as a symbol of the individual's ability to continue successfully in work already familiar at the time blindness occurs. Also, it is clear that this type of endeavor requires some business acumen, supervisory ability, planning ability and a considerable capital outlay.

Employer: Self-employed.

Hours: Irregular, but often works long hours in order to supervise all aspects of his business.

Assistance—Supervision: Uses his employees and/or his wife as drivers, record-keepers and supervisors. However, the records and some of the supervision would probably be done by others even if he could see. The only supervision lies in the attitude of his customers.

Equipment, Adaptations, Records: Does little in the way of operating equipment, and has developed no adaptations. Records are kept by employee, including all the records necessary to run a business.

Travel: Travels constantly from customer to customer and all over his pits and plant. Good mobility is important.

Vision: Uses no vision in his work.

Education and Training: Completed ninth grade. Training came through years in the construction and, more recently, concrete business.

Compensation: Not stated.

Concrete Ornament Maker 575.781 (1, M, 72, limited reading)

Job Description: A practical combination of technical and artistic skills may be found in the making of concrete objects such as bears, planters, and figurines. Such objects form attractive decorations for yards and gardens. They are made by pouring concrete into molds.

First, the mold itself must be designed and made; our interviewee was sent to a special school to learn this. Then the concrete must be mixed; he says he can tell when it is ready to pour by feeling it. When the mold has been filled, it must be allowed time to harden, then the figurine can be removed and sanded to a fine finish. Sometimes it is colored by spray painting.

The usual activities of a small business must also be handled, including purchasing, bookkeeping, billing, and communication with customers. This business could be especially satisfying to a person who seeks variety, some opportunity to be creative, and the freedom of running one's own business.

Employer: Self-employed.

Hours: Roughly a standard work week.

Assistance—Supervision: He has a helper who assists with heavy work and with spray painting. His wife may also assist at times. He has no formal supervisor, but if his work is not well done, he will have few customers.

Equipment, Adaptations, Records: He uses standard tools such as pliers, a wire cutter, bolt cutter, dies, air compressor paint guns, paint brushes, block and tackle. No adaptations. Must keep all the standard records of a small business.

Travel: None.

Vision: This man can do limited reading which is useful in maintaining quality, especially the quality of painted objects.

Education and Training: Had only six grades of school. Was trained for this work at a special school.

Compensation: Makes \$8000 to \$9000 per year.

Dye House Worker 582.782 (1, M, 45, can read ink print)

Job Description: Did you ever think about the fact that all material is about the same color—a kind of tan or off-white—before it is dyed? Those lovely colors, which make cloth so attractive in clothing and in its many other uses, are the result of some highly technical work in the dye house.

The dye house worker may assist in placing the cloth on reels of stainless steel to go through the vats of dye. The material comes in fifty-yard pieces, but two of these are sewn together for dying because they have found that this works out better than doing it in fifty-yard pieces. Our interviewee did no sewing, nor did he handle the dye because excellent color vision is vital to the latter. He did assist with all other elements of the job, and his special task was putting the materials through the extractor to remove the water when the dye bath was completed. He also had to clean the extractor very thoroughly after each use, since otherwise the dye from one lot of cloth might affect the coloring of the next lot to go through the machine. Occasionally, he helps in preparing the cloth for the dye house, at other times he may assist in boxing the finished cloth, loading it for shipment, or in taking samples for the chief dyer.

Employer: Dye house.

Hours: 37½ hours per week.

Assistance—Supervision: Does not require assistance, but leaves two parts of the job to others: sewing and application of dye. Works in a small organization where all workers are under the constant supervision of the owner.

Equipment, Adaptations, Records: Works with all the machines of the dye house but especially with the extractor. No adaptations or records.

Travel: To and from the place of employment only.

Vision: Appears to use vision in positioning materials correctly.

Education and Training: Although he is a high school graduate, he says no special training is necessary for his job.

Compensation: \$92 per week.

Bag Turner and Hammerer 583.885 (1, M, 46, totally blind)

Job Description: When ladies' handbags are made, they are sewed inside out. They are brought to this worker, still inside out, on trays which hold from 4 to 25 dozen bags, depending upon their size. The trays filled with bags are placed on the floor at his left. He sits at a bench which has bolted on it a turning tool, rather like a screwdriver bolted into a vertical position. He picks the bags up, one at a time, turns them inside out, then runs them over his upright tool to push out the corners so that there will be no pleats in the leather. He determines by touch whether he has all the corners smoothly turned out.

Then, he moves to the other end of his bench where there is a power hammer over an anvil. He runs all seams of the bag, including the seams of zippers, through this hammer, thus flattening and straightening the seams and actually shaping the bag to some extent. Then he lays the bags on another tray, on the floor to his right, and when it is filled, someone takes them away. His hammer is automatic, and the only adjustment he has to make to it is to widen or narrow the space between the hammer and the anvil, depending upon the thickness of the material from which the bag is made. He feeds the bags across the anvil, pulling with his right hand and shaping with his left, as the hammer flattens the seams into shape.

Since he does just one operation in the assembly line which makes the bags, he must work quickly and steadily to avoid delaying other workers. The foreman of the line decides upon the order in which work is to be done, and each worker has some responsibility for inspecting the work done up to that point, so all his production is promptly inspected. However, he actually checks his own work by touch as he is doing it, and knows that the seams are flat and straight before the bag leaves him. Sensitive fingers are necessary.

Employer: Manufacturer of ladies' handbags.

Hours: 40 hours per week.

Assistance—Supervision: Requires no assistance in the performance of the job, and appears to receive no unusual supervision.

Equipment, Adaptations, Records: Uses turning tool and power hammer. The latter has a protective box over the belt and motor, put on especially for him. No records required.

Travel: To and from the place of employment only.

Vision: Totally blind.

Education and Training: Is a high school graduate, but all training related to this work was received on the job.

Compensation: \$1.90 per hour.

Roll Turner (knit goods) 589.885 (1, M, 23, object perception)
or Turn Pole Operator
or Turning Machine Operator

Job Description: With the great increase in the use of knitted goods in recent years, there must be increasingly great demand for these workers who turn the knit tubing inside out and into rolls or folds.

The cloth comes off a knitting machine, is dyed, and usually it is also napped, which means that it is put through a process which

gives it a smooth, soft surface. Then it comes, on trucks, to the Turning Machine Operator. His machine has a long pole on it and on the end of this pole he fits one of three sizes of head, according to the width of the knitted cloth. The worker then threads the cloth over the head and through a slit at the back of the pole where two wheels or spools, turned by a motor, can pull it through, turning it inside out, and pile it, folded, on a truck. The worker must see that the machine keeps folding neatly, and must be listening carefully so that he turns off the machine at once when it comes to the end of a piece of cloth or if anything goes wrong. He must keep a record of the color and number of the cloth he works on and from time to time he must clean up the lint which this machine distributes around the area. He may also be responsible for noting defects, especially spots in the cloth which have not been properly napped.

This work requires alertness to pick up defects and to turn off the machine promptly if anything goes wrong. Except at the setting up of each new roll of cloth, speed is that of the machine, not the worker, but some dexterity is helpful.

Employer: Manufacturer of knit goods.

Hours: 40 hours per week.

Assistance—Supervision: Needs no assistance and supervision is general.

Equipment, Adaptations, Records: Turning machine used with no adaptations. Sweeper to clean up lint. Must record color and number of cloth he has turned; uses pencil for this.

Travel: To and from the place of employment only.

Vision: This worker is successful with little more than object perception. Has evidently memorized the numbers of the cloth and can see colors.

Education and Training: Limited formal education is required. Chiefly a matter of on-the-job training.

Compensation: \$1.65 per hour.

Laboratory Machinist 600.280 (1, M, 42, light perception)

Job Description: Some machine shop jobs can be very interesting and challenging. They may include the design of totally new equipment, the making of special parts to improve the functioning or slightly change the functioning of established equipment, and opportunities for highly original and inventive thinking.

One worker is a machinist for a medical center. Physicians come to him with special needs, ideas for experimental equipment, and requests for devices which may save lives. For example, he produced a pair of teflon valves which were installed in a human heart

and are functioning quite well. On one occasion, a physiologist needed a device which would capture expelled breaths of air, one breath at a time; with the aid of his fellow workers in the shop, our interviewee designed and made a twelve-way valve which made the device possible.

Although this worker cannot see drawings or prints, he states that he visualizes mentally quite well, getting a complete picture of the object in its finished state. Although he uses standard tools, he has notched and marked many of them and has modified scales, and brailled dials. He now has a sighted apprentice who keeps his records but he maintains a braille file of the sizes of the most frequently used tools and also uses braille to record dimensions and details of jobs.

Employer: Medical Center.

Hours: Standard work week.

Assistance—Supervision: Needs help chiefly in reading and record-keeping. Works at a level which requires little supervision but he, himself, is a supervisor.

Equipment, Adaptations, Records: Uses all standard shop tools and machines. Has notched or otherwise marked dials, measuring instruments, etc. Uses braille for reference records.

Travel: Is very mobile within the shop area; otherwise travels to and from the place of employment only.

Vision: Has no useful vision.

Education and Training: Is a high school graduate and was trained and experienced as a machinist before loss of vision. Was with the present employer at the time of loss of vision.

Compensation: \$7,500 annually.

Honing Machine Operator 603.782 (2, M, ages 40-63, totally blind)
Broaching-Machine Operator 605.782

Job Description: One interviewee runs two machines used in the manufacture of gears. Since gears turn and must mesh rather exactly with other gears or moving parts, their surfaces must be smooth and perfectly shaped. This perfection is often achieved by a process called honing.

The gears are brought to him, along with a go-no-go gauge. By use of this gauge he can determine the spots which require honing. He then positions the piece in the machine and allows the pair of revolving stones to hone it down. Then he checks it again with the gauge, to be sure it is right before he goes on to the next gear.

He also works on a broaching-machine which forms the keyways, or indentations, in the gear. He does not set this tool up, so his only assignment here is to feed the gears into it and check the correctness of the finished pieces.

While, in a sense, these are production jobs, the important thing is accuracy. Errors produce scrap, which is costly.

Employer: Manufacturer of gears.

Hours: Standard work week.

Assistance—Supervision: The supervisor reads each new work order to him. When he uses the broaching-machine it is set up for him but this would be true for sighted workers, too. This is a complex machine which is usually prepared for each new job by the set-up man. May receive help in carrying his work from one place to another.

Equipment, Adaptations, Records: Uses honing machine and broaching machine, Allen wrenches. No adaptations. No records.

Travel: To and from the place of employment only.

Vision: Totally blind.

Education: Left regular schooling when 14. Had a few months of machine shop training, but was trained chiefly on the job.

Compensation: \$5,750 a year.

Turret Lathe Operator 604.380 (2, M, ages 22-34, one with light perception, one able to read)

Job Description: The turret lathe is one of the most complex and therefore one of the most versatile production machines in the shop. A skilled operator can perform a variety of operations, such as turning, boring, threading, facing, and tapping—all of which are technical names for various ways of treating a piece of metal. Despite the complexity of the work performed with this machine, it is a production machine, by which we mean that a large number of pieces will be treated in the same way and the work must be done quickly as well as very accurately—often to 10 or 15/1000 inch.

For most operators, the job begins with reading the blueprint or job order to learn just what the specifications for this job are: the dimensions and tolerances, the tooling instructions and procedures. One of our interviewees is able to read the blueprints for himself with the aid of a special, three-power lense; the other must have this material read to him. Then the operator gets the needed tools from the toolchest or supply area. Again, if he needs help in finding just what he needs, such help is readily available.

Next, he sets up his lathe for the job by positioning and firmly fastening the correct tools into the toolholders on the turret and cross-slide. To do this, he usually has to use wrenches. One worker points out that he has to know just where his tools are in relation to the work in the lathe; he does this by using what he calls a clock system on the handles and dials; for example, if he uses six turns back from the piece he knows that when he turns it in six turns, the tools are about to touch the work and he can engage the power. The other worker says that the carriage on his lathe comes up to a stop on automatic feed; a person with vision would keep his eyes on the carriage because you must not run this carriage into the stop. He puts his index finger right on screw of stop, and as that carriage feeds in closer, he can tell within $1/32$ of an inch from the end of the piece. He runs the carriage up there, shuts it off, and runs it in by hand.

One interviewee has his material brought to him, ready for his lathe operations. The other must get his stock from the storeroom for himself. He works with bar steel which must first be cut into various sizes with a power hack saw and this he does for himself. The saw has a vise on it in which he tightens the stock in such a way as to get approximately the length he wants—this length does not have to be accurate—then brings the saw down and it cuts automatically.

Part of the set-up process involves moving the controls to set the specified rotation speeds, feed rates, and the depth of cuts. When the operator finally has the tools correctly positioned in each station of the turret lathe, he can start feeding his stock in, in other words, he can start production. Then his chief assignment is to keep the machine working well, possibly directing the coolant on the tools or workpiece. He must check the work regularly and both interviewees indicate frequent use of brailled micrometers and scales.

Employers: Manufacturers of machines or metal parts for machines.

Hours: Standard work week.

Assistance—Supervision: One worker must have prints or job specifications read for him; both use occasional help in finding tools, checking the accuracy of their work and making up production records. The foreman is likely to do any of these things, but is especially likely to check the work for accuracy.

Equipment, Adaptations, Records: Standard tools are used except for brailled micrometers and rules. One man is able to read dials with his magnifier. The other may have some assistance with this and has marked one of his dials so that he can use it tactually. Both must keep production records and do this with sighted assistance.

Travel: Generally speaking, travel is to and from the place of employment only. One worker picks up his stock for himself but this does not involve any great distance of travel.

Vision: A man without useful vision is successful in this work.

Education and Training: Both men are high school graduates, and both had from several months to a year of machine shop training in which they were specifically trained on the turret lathe (among other machines). During this training they also learned the use of the measuring instruments. One criticism of training (as received by one particular operator) was that while it taught the use of the machine, it did not teach "production." This concept of getting out a mass of work effectively had to be learned on the job.

Compensation: Roughly \$2.40 per hour.

Threading Machine Operator 604.782 (1, M, 41, totally blind)

Job Description: The threading machine cuts a thread on any part that is to be screwed into another, that is, it cuts the spiraling indentation which makes it possible to screw a nut onto a bolt, or one piece of pipe onto another.

Our interviewee runs a Landis Threader and does strictly outside threading, that is, he prepares the piece over or around which another piece fits. From time to time, he uses three different machines, and back of each machine there is a shop bench on which he can prepare materials. At the end of each bench he has made an orderly arrangement of the gears which fit into that particular machine so that he can easily find what he wants. By fitting different gears into the machine, he can cut threads of different sizes. With his various gears and various machines he can make about 200 different set-ups which means he can cut 200 different threads.

The work is brought to him, as it is to all the operators, on a flat along with a work order which tells him what to do. Over the years he has made up a book with all the gear ratios in it so that he can readily determine, from the work order, which gear and which machine to use. He made his book on plastic because he works with oil so much that a book with paper pages would soon be ruined. Having set up the proper machine with the appropriate gear (which he determines by counting the teeth), and chasers or cutting pieces, he takes the pieces which are to be threaded, one by one, puts them in the machine, turns a wheel to bring them close to the threading head, and the threading is done automatically. The finished piece is also kicked out of the machine automatically. Then he can return the table to the starting point and do the next piece. He must keep his machines oiled, may do very minor repairs.

This work requires speed not only in feeding the machine but in making the setup, a new combination of gear and chasers, for each work order. It is necessary to work accurately to avoid scrap, and to sense at once if something goes wrong with the machine—in other words, mechanical aptitude is important.

Employer: Plant which makes tractors—or other manufacturers of metal parts.

Hours: 40 hours per week.

Assistance—Supervision: He must have the work order read to him, and the four chasers, or cutters, for each job set in proper order on his machine. The chasers are numbered but there is no way he can identify them for himself. Direct supervision is minimal but work is regularly inspected.

Equipment, Adaptations, Records: He has notched the vises used to hold parts so that he can pair them up easily. He has made little brass tags to identify some of his gears; there is plenty of room in the center, around the hub, to fasten these with little rivets so they do not dangle. He uses brailled measuring instruments which he obtained from the American Foundation for the Blind. He has made up a brailled book of gear ratios on plastic and it has worn well despite the oil constantly in the work area. He uses the Landis Threader without adaptation except the notched vises or “jaws.” He keeps his time record on cards which fit his pocket slate, reports at the end of the day.

Travel: To and from the place of employment only.

Vision: Totally blind.

Education and Training: Dropped out of school after 11th grade. This formal education is only indirectly related to his work. Wishes he had had machine shop training. Learned on the job. Started with this company as a drill press operator; automation led to his changing to the present job after many years with the company.

Compensation: \$3.20 an hour.

Lathe Operators (Metal) 604.885 (2, M, ages 23-45, one has light perception, one can read print)

Job Description: Lathe operations of various types play an important role in the manufacture of metal parts and may require very exacting and accurate processing of the pieces.

One worker operates a metal lathe which cuts the inside portion of the outer ring within which an oil slot ring fits. The oil ring is one of several types of piston rings, slotted to allow the oil to drain

back through the ring. These rings, on which earlier workers have already performed several operations, come to our interviewee as circles of metal in which the gap has been cut, but not finished. He places each ring into a pod, which is a round metal holder about $\frac{3}{4}$ inch thick with a hole cut in the center to the exact diameter of the ring. There is a small feather in the pod which the gap of the ring fits on both sides. When he pushes a button, the pod is pulled into position and held by air pressure. With the pod firmly held in the dogs of the headstock, the worker uses a semi-automatic lathe to cut the inside diameter of the piston ring while it is supported against the pod.

When a new order comes through, this worker makes his own set-up on the machine. That is, he finds the new size of pod, fastens it correctly in place on the machine with its proper backing, and makes the adjustments on the cutting tool to make the required cut with maximum speed and accuracy. His work is checked for accuracy by an inspector at least once every hour. His efficiency is measured by the quality of his production and by the number of pieces he makes.

Another worker runs a 12-inch Monarch Engine Lathe doing work for the Atomic Energy Commission, the exact nature of which he cannot state because it is classified information. His lathe is graduated so that he can adjust it to 5/1000 and he can achieve even greater accuracy by using his micrometers. His biggest handicap in this work is the fact that he must have someone read the blueprint to him; he memorizes it, then goes ahead with the job. He has his graduated dial notched so that he can read it tactually. He has also devised his own gauge block which has about 30 different sizes on it. He can read ordinary calipers through gauge blocks but says a machinist has little use for calipers since they are not accurate enough for his work; consequently he usually uses micrometers to do his measuring. He states that he cannot do as exacting work as would be possible with vision, but there is plenty of work with less exacting tolerances and this is the work assigned to him.

Excellent tactual discrimination, superior speed, and considerable mechanical aptitude are necessary for these jobs.

Employers: Various manufacturers of metal parts.

Hours: 37½ to 40 hours per week.

Assistance—Supervision: Assistance is needed in reading prints and in recording the time sheet. May at times need assistance in sharpening a tool. The supervisor usually read the prints.

Equipment, Adaptations, Records: Metal lathes and all related tools. The only adaptations involve notching of dials or brailleing of measuring instruments so they can be read tactually. One worker often makes

special gauges or guides for specific jobs. Both workers must record the time spent on each job on time sheets but this is done for them by the timekeeper or supervisor.

Travel: To and from the place of employment only.

Vision: Although one man has useful vision, it is not clear that this is essential to the job since both seem to work chiefly by touch.

Education and Training: Both completed high school and one had an additional two years at vocational school. The other man believes that some vocational school training would be desirable but states that the work can be learned on the job. Learning in school to handle the machine greatly eases the learning problem on the job.

Compensation: \$2.60 to \$3.20 per hour.

Milling Machine Operator 605.885 (4, M, ages 26-49, one with light perception, three able to do limited reading)

Job Description: The milling machine is one of the standard and familiar production machines in the machine shop but there are differences among the machines, especially differences in size and whether they are horizontal or vertical. On these machines, metal parts are milled to fairly close tolerances.

For each new job, the operator or the setup man must set up the mill. Three of our four interviewees do their own setups, and one states that this is a quite involved procedure because of the exactness with which it must be done. He states that the average time required for setting up the machine is $2\frac{1}{2}$ to 3 hours. He generally uses two milling cutters, one a roughing cutter and one a serrating cutter. The cutters are on an arbor or shaft. The part on which he is to work, often called the stock, is placed in a vise and passes over the roughing cutter which produces the radius required in the roughing dimension. Then he removes the piece from the first jig or vise and places it in a second which holds it while the finishing operation, a serration, is performed.

Another man does a great variety of milling operations, always working from blueprints as his guides. A third worker, in contrast, almost always works on a part which is made of malleable iron and he uses two machines at the same time so that while one machine is cutting, he can insert a part into the other machine; while that one is being cut, he is inserting a new part into the first machine, and so on. By this process he turns out about 800 pieces an hour. He points out that it is necessary to be fast and persistent!

The operator is responsible for seeing that his machine is oiled, usually every couple of hours. There is a fluid which automatically cools the machine although on some machines the operator directs the coolant. In some machines the finished part is automatically thrown

out the side; in others, the operator must remove it. Tools must be used to set up the machine and sometimes tools may be required to position the stock. Since the operator is responsible for very exact finished work, he often checks through measurements, or use of gauges. At times, the milling machine operator also works on other shop equipment, such as drills.

A major requirement for success in this work is mechanical aptitude, that sense of handling machines and materials, that ability to recognize from sound when the machine is not working correctly or when the load is too heavy. Speed and manual dexterity are also prime requirements, supported by energy, patience under monotony, and a high regard for exactness and good workmanship.

Employers: Any organization with a production machine shop.

Hours: Standard work week but often overtime is required.

Assistance—Supervision: Occasionally assistance may be needed in reading a blue print or setting up and checking a machine. The setup man or supervisor usually gives this help. Usually all work is regularly inspected. One man uses assistance in filling out his production card.

Equipment, Adaptations, Records: All equipment is standard but one man has adapted his indicator gauge, used for centering the product; the glass has been removed and the indicator needle is adapted to reading by touch so that he can read it to within a few thousandths of an inch. Brailled micrometers and scales are used by several. One man keeps records of the jigs and fixtures to be used on certain jobs but generally speaking records are at a minimum on these jobs.

Travel: To and from the place of employment only. Only one of these four workers ever has to truck his own materials from the supply area; in other cases the work is always brought to the machine operator.

Vision: A totally blind person is successful in this work.

Education and Training: All these men are high school graduates. Most of them have had previous industrial experience on simpler tasks and they indicate that this enabled them to learn their present work more rapidly but it is not an absolute requirement.

Compensation: \$1.70 to \$2.90 per hour.

Drill Press Operator

Tapper Operator
Reamer

606.782, 709.884 (18, MF, ages 23-55, vision varies from totally blind to some reading)

Job Description: Making holes can be big business! Making them the right size and depth, and in exactly the right spot, is the work of the drill press operator. Sometimes these holes must be subjected to further treatment such as tapping, which puts a thread on the inside of the hole (such as the thread of a nut so that it twists over a bolt), or reaming which enlarges and smooths the hole.

Although these workers contributed to the manufacture of very varied products—and drill press operators work on thousands of different products—all performed in much the same way. The drill press may have a single spindle, which means that it cuts only one hole at a time, or it may be a multiple-spindle press which cuts more than one hole at a time. The piece to be drilled is put in a jig, clamped in place, and correctly positioned. The drill is then operated either by kicking a pedal, pressing a button, or pulling a handle down. The finished piece is then removed and a new piece put into the jig.

The work order may come to the press operator with a blueprint showing just where the holes are to be made; this must be read by a seeing person. The operator can usually set up the proper drill and adjust the jig to get the piece in the proper position. Often, the worker must inspect the product from time to time, sometimes using a micrometer. Drills must be ground from time to time to keep them sharp, but usually this is done by a sighted person. The worker must constantly be alert to something going wrong with his machine, usually signaled by some change in sound.

This is production work, requiring quick and accurate movements since several thousand parts may be completed in a day.

At times, these workers are asked to do other operations, particularly the related tapping and reaming operations, which are done in a generally similar way.

Employer: Manufacturers of various metal parts.

Hours: Usually a standard work week, but overtime may be required at times

Assistance—Supervision: The supervisor usually reads the work when a new assignment is begun. Frequent inspection is characteristic, and the supervisor will often help if something goes wrong with the machine.

Equipment, Adaptation, Records: Drill presses, taper, reamer, hand tools for set-up, braille micrometer, various gauges. Production records and time cards are often kept by others.

Travel: To and from the place of employment only.

Vision: Workers with only light perception or object perception are successful in this work.

Education and Training: All are high school graduates; one had a year of trade school training. All felt that at least enough shop training to become accustomed to machines would be highly desirable, although on-the-job training is always necessary to learn the specific operations.

Compensation: \$1.45 to \$2.85 per hour.

Bandsaw Operator 607.782 (1, M, 53, object perception)

Job Description: The bandsaw operator cuts bars of steel into measured and/or mitered pieces according to a blueprint. This is the first step in the manufacturing operation, the first step in transforming raw steel into a product. A fellow employee, a layout man, reads the blueprint, but our interviewee, with many years of experience, has memorized hundreds of measurements, and often does not have to have any read to him for a week or more; he needs only to know what product he is to work on that day.

The blind worker operates the bandsaw in the same way that a sighted person would. It is not a high speed saw. It does have one danger, the fact that the open saw is immediately ahead of the hands, but it also has automatic stops which all workers should use. The worker selects an appropriate bar of steel from the steel racks and clamps it into a vise on the bed of the saw. He sets up his machines by turning screws. Then he just has to twist the blade into the guide rollers. The running blade feeds itself into the material. The band is vertical and cuts through a slot in the table while the material is held directly over the cutting slot. The worker can add or reduce pressure by moving a weight on the side and he can also increase or reduce the speed of the saw, depending on the material to be cut. He actually operates two saws, one for right hand mitered cuts, the other for left; these are so placed that he has only to turn around to change from one to the other. The worker also takes care of minor maintenance on his saws, such as oiling, and if a part breaks or wears, he sends to the office for a new part and replaces the old one.

He must measure his work frequently, and for this he uses a six-foot folding ruler with a six-inch scale extending out from it. On this he can find the marks for 1/16 inch with his thumbnail. This is a standard ruler, but he finds it easy to measure accurately by simply counting the laps, plus the necessary length on the extended scale. Although it is a long time since he had any difficulty, he remembers that when he was learning to use this saw, he had trouble with a protractor scale at the back on which it is possible to determine the degrees right or left. When a new saw was purchased, the manufacturer extended the five and ten degree lines farther so he could readily read them by touch and also identify the shorter one-degree marks in between. This modification is quite helpful.

This is a job in which quality of production is quite important. This man feels that mechanical aptitude is quite necessary, plus an ability to measure accurately. He feels that some of his success should be credited to his father who very early taught him the theory of certain types of machines, patiently answered his questions, and helped him to picture, mentally, machines he had never touched.

Employers: Metal manufacturer.

Hours: 40 hours per week.

Assistance—Supervision: Needs assistance only when assigned a new job or one that is run infrequently; at such times, a fellow worker must read dimensions from a blueprint for him. Since he has been on this job for many years, he needs little attention from the supervisor.

Equipment, Adaptations, Records: Bandsaw, tools needed to make adjustments and minor repairs on the saw, a rule for measuring. The rule is a standard one, but he does use touch to read it. A protractor scale on his saw has the five and ten-degree lines lengthened so they can more easily be differentiated from the one degree lines. No records.

Travel: Chiefly to and from the place of employment. Does travel in work area to get steel from racks.

Vision: Although he has object perception, his account of the job gives no indication that he uses vision on the job.

Education and Training: Is a high school graduate. Feels his father's early training in machine theory, and opportunities to develop his mechanical aptitude were very important. Also had brief training in a night school shop course set up for blind people, but did little more than become acquainted with the various machines there.

Compensation: \$1.70 per hour.

Production Machine Operator 609.885 (9, M, ages 34-64, 6 totally blind or light perception only, 3 with travel vision or able to do some reading)

Job Description: In the making of original parts or replacement parts for machines, or in the various operations necessary to repair equipment and machinery, it may be necessary for one worker to master a number of machines and become skillful in the use of a variety of tools. The more usual machines are lathes, milling machines, drill presses, punch presses, grinders, tappers, screw machines, spot welders and riveters. None of the men described in this section used all of these, but all used three or more and, in some cases, they were also skilled with specialized equipment designed for their particular company.

In some cases they worked on the same machine for days at a time, often producing thousands of the same part and often paid on a piecework basis. In other cases, they moved between several machines on a single day and might make only one piece of a certain kind, in which case they were paid on an hourly, rather than a piecework, basis. They all work from blueprints or similar specifications which are usually read for them at the beginning of the work assignment. They set up their machines by inserting the proper drills, dies, etc. They then feed the work into the machine, usually using a jig or fixture to hold the work in position, start the machine, observe its correct operation, and usually inspect and measure the product at least on a spot-check basis.

In some cases the machines are set up for the blind worker, and perhaps for all workers in that shop, by a set-up man. Although their jobs consist mainly of some form of machine work, they may at times do bench work, such as deburring, or assembling of parts. At other times they may do inspection for the purpose of separating the good pieces out of a pile of scrap, or they may do simple maintenance on their machines.

These jobs differ from those described under such titles as Drill Press Operator or Lathe Operator chiefly in the fact that the worker must be able to operate a number of these machines, not just one, and in the fact that there is much more variety in job content. Often these workers came to the employer to operate just one of these machines, but gradually mastered more and now are especially valued for this versatility. In other cases, the company requires all shop employees to master all the machines. Manipulative speed, flexibility in changing work assignments, and mechanical aptitude are important to success in production machine operation.

Employer: Various manufacturers of metal parts; one self-employed in a repair shop.

Hours: Standard work week, with some overtime.

Assistance—Supervision: Reading the blueprint or other form of work assignment is usually done by the supervisor. Assistance may be given in setting up the machine, or in sharpening and adjusting. Work is more likely to be brought to the blind worker whereas the sighted worker might go for his own work. One man does certain operations which are controlled by timers; he has to have someone set these for him because the dials are covered. The man who is self-employed cannot pick up and deliver work; that is, the customers have to bring the work to him which might be called a form of help (and which he thinks greatly limits his business). Production records for these men are usually kept by others.

Equipment, Adaptations, Records: All these men use at least three of the following: lathes, milling machines, drill presses, punch presses, grinders, tappers, screw machines, spot welders and riveters. One uses a vibrator and another machine which puts a microfinish on parts. The only adaptations reported are various braille or raised dot markings, or notches, in order to measure, count the number of turns, etc. All use measuring instruments with some tactual cues. With assistance, all keep some production records.

Travel: To and from the work place only. Most of these men move about the plant with guides, at the request of the company.

Vision: Totally blind persons are successful in this work.

Education and Training: One of these men has only three years of formal education (left because of loss of vision) ; others have 7th, 8th, 9th and 11th grade educations. Three have high school diplomas and one had two years of college. Seven had at least some vocational or shop training, and usually they had several years of such training. One had years of experience as an auto mechanic while sighted. Several had related industrial experience prior to the present job.

Compensation: From \$1.57 to \$2.95 an hour, usually plus piecework bonus.

Steel Shear (Sheet Metal) Operator 615.782 (1, M, 26, totally blind)

Job Description: In the manufacture of various products from sheet metal, the first step is usually the cutting of pieces to correct size and shape. One worker does this by using a shear.

The sheet metal is delivered to the plant in certain standard sizes and is piled along the wall back of the shears. As the worker starts each new assignment, he is told the dimensions of the pieces he is to cut from each sheet and just how the cuts are to be made; in other words, someone else has done the planning of just how to get the most out of each metal sheet. A setup man adjusts the shear for the required dimensions, so that all the worker has to do is run the metal under the blade up to the pre-set gauge and then activate the shear by pressing a pedal with his foot; sometimes two or three cuts must be made to trim the sides and ends to perfect squares. There are gauges on the shears which can be moved back and forth to set the shear to the desired size. On bigger pieces, two men may work together because the material is too limber to be handled accurately by one person; usually the sighted person will hold the metal against the shear while the blind worker presses the pedal and pushes the sheet through.

After a piece is cut, it drops automatically into a box; these pieces must later be picked up and piled on a nearby table. Another worker removes the piles of finished pieces since the blind worker is not allowed, by the company, to operate a truck. If there is any scrap

remaining from the big sheet of metal, the blind worker does throw this into the scrap barrel close by. The blind worker must maintain a standard rate of production, in order not to delay the workers who follow him in the processing of the part. His work is automatically checked by the processes which follow his; if it is not accurate, it will not fit the dies.

Employer: Manufacturer of metal products.

Hours: 40 hours per week.

Assistance—Supervision: His supervisor sets up his machine each time the work changes and tells him just how the pieces for that job are to be cut. During the running of a job, he receives little supervision since the accuracy of his work is automatically checked by the succeeding processes.

Equipment, Adaptations, Records: Uses a steel shear, without adaptations. No records.

Travel: To and from place of employment only.

Vision: This work is done successfully by a totally blind person.

Education and Training: High school graduate plus four months of machine shop training.

Compensation: \$1.70 per hour.

Dial Punch Press Operator 617.885 (2, M, ages 43-54, totally blind)

Job Description: The assembly of two or more pieces, one rubber and the other steel, such as bushings, may be accomplished by man and machine working together, the machine being called a dial press. Parts for the assembly are brought to the work space by belts from hoppers overhead, the rubber parts coming down one side and the steel parts down the other. Bullets, over which the shaped piece is formed, are in a bin in front of the worker and are used over and over. The worker picks up the three different pieces, two with one hand and one with the other, and puts them together into a station on a turntable. The turntable automatically moves them around to the next station where a punch descends with great pressure to fasten the pieces together; then the assembly automatically shoots out the other side of the machine. All work is run in an oil-kerosene mix to lubricate the rubber so that, when the punch comes down, it will not split and make a bad piece.

The operation may be done by one man alone or, to double production, by a two-man team. The worker loads a station, or hole, on the turntable every three seconds and one man will complete about 7,000 pieces in a working day. However, this is an incentive job and our interviewee has done as many as 9,000 pieces alone. The worker

knows from the sound of the machine if something is wrong with it; occasionally it may be necessary to use a pry tool when bushings stick in the machine. Someone else removes the box from the other side of the machine when it is filled with parts.

Occasionally, when the machine is not running, the worker may do sorting or gauging to retrieve usable pieces from scrap. This kind of assignment is likely to be brief but does require certain flexibility on the part of the worker.

Effective performance on this job requires excellent speed and manual dexterity, exact orientation in the work space, exact positioning movements so that the parts fit together smoothly. Otherwise, scrap will result and this greatly damages the worker's record. For the levels of production described, the worker must also have excellent stamina for the working day.

Employer: Manufacturing company.

Hours: 40 hours per week.

Assistance—Supervision: Requires no assistance or unusual supervision in the job itself. Companies prefer that these workers move about the plants only with guides since there are many hazards in the environment.

Equipment, Adaptations, Records: The dial press chiefly, with no adaptations; it does have a safety feature so that it is impossible to put one's hand under the press without shutting it off but this is true for seeing workers, too. May occasionally use a pry tool or, for other jobs done during down time, screw drivers, gauges. No records.

Travel: To and from the job only.

Vision: Totally blind workers are successful in this job.

Education and Training: One worker completed high school, the other only 9th grade. The chief training is on the job; both workers were up to production in less than 30 days.

Compensation: Incentive—roughly \$3.00 an hour.

Punch Press Operator 617.885 (4, M, ages 22-46, two totally blind, one LP, one able to do limited reading)

Job Description: The punch press is a very adaptable machine used to punch parts of many different shapes out of flat stock, or used to punch holes through pieces. Although the workers described here made very different products—expansion bolts, stoppers for medicine bottles and steel parts for beds—the process varies very little.

In each case, the punch press is set up with the proper die, or cutting pattern, for the particular job. The worker usually has a

number of these dies available and as he receives each new work order, he fastens the correct die into the machine. Then he feeds the stock, or the partially formed parts, into the machine and, either by hand or by foot pedals, causes the press to descend and make the necessary cuts. Usually the product is ejected from the machine automatically, but the worker may take some part in removing it and disposing of scrap.

These are production jobs, usually piece work, and as many as ten or twelve thousand pieces a day may be made.

Employers: Many types of manufacturing organizations.

Hours: Usually a 40 hour week but overtime may be required at times.

Assistance—Supervision: The chief assistance is in reading work orders. Occasionally, when stock is large or heavy, help may be given in bringing it to the work space. If the machine is not working well, the supervisor may be called instead of the worker's trying to make the necessary adjustment for himself as a sighted worker probably would.

Equipment, Adaptations, Records: Punch presses of various types, none adapted or with special safety devices. Wrenches, pliers and hand tools used to set the dies into the press. Production records, usually kept for the worker by others.

Travel: Chiefly to and from place of employment. May travel in work area to obtain stock.

Vision: Totally blind workers are successful on this job.

Education and Training: All had less than complete high school education; several had shop training and found it helpful but not required since the chief preparation was on-the-job instruction.

Compensation: \$1.25 to \$1.95 per hour.

Inspector 609.684, 823.281, 619.281, 612.281, 788.384 (10, MF, 22 to 54 years of age, six totally blind, one with travel vision, three able to read some print)

Job Description: Most products are inspected—and many are inspected at each stage of manufacture—in order to be sure of good quality. This “quality control” inspection may be done on a sampling basis; i.e. a few pieces are randomly pulled from each batch and inspected. If these pieces are all right, the whole batch will be passed. However, accuracy is so important in some products that every piece is inspected, and even where the sampling procedure is used, every piece is likely to be inspected if the few samples are not all right. Our interviewees did this kind of total inspection on a great variety of products. Even this variety obviously represents merely examples of an almost endless number of items upon which inspectors might work.

For example, the *two-way radios* used for communication on the citizens band are completely inspected by one of our interviewees. He picks up a number of sets from the end of the assembly line and trucks them to his work space. There he hooks up each set, and checks to be sure there are no stray voltages, cleans the relay unit, and lines the coils to get them within a certain tolerance. Then he tests it electrically to be sure there are no short circuits, that the relay functions properly and that the lights work as they should. If he finds trouble in a set, perhaps because there is a small flash of fire or a roll of smoke, he has to try to find the cause, tag it and send it for repair. After being repaired, it must return to him for a final inspection before it can be packed for shipping. Technical aptitude and a desire to find and solve problems are important qualifications for this job.

Another worker tests heater elements for *thermal overload relays*. These overload relays have the same basic function as a fuse or circuit breaker; that is, they trip and save a motor from being damaged by too much current. In testing, the worker installs the controls in constant temperature ovens, throws a switch, and sets a timer, and waits for a signal that the overload has tripped at that particular current. This includes regulating the current through use of a transformer and reading an ammeter which indicates the current. When the piece does not work out correctly on this test, the worker must estimate the change required to bring it into proper range, then test it again. This particular man also develops tables which show the overload currents that would cause a particular heater to work and, at times, he has assisted in the design of new equipment. This is not at all a routine job, and requires a good bit of mathematical background and technical know-how.

One man inspects *ball bearings* which are composed of four parts called the inner wheel, the outer wheel, the retainer, and balls. They are brought to him in pans. He picks up the bearing in his left hand and grasps the inner wheel with his thumb and index finger. With the index finger of the right hand, he rotates the outer wheel of the bearing to determine whether it is running freely or whether there is any dirt or grit in it. He can tell by the way it feels. Also, if there is any defect in the retainer section or if it is pressed in unevenly or is too large or too small, the outer wheel will stop rotating. When there is no defect, the bearing rotates freely. As he does this, the worker is seated in front of a motor and if the bearing passes the hand inspection just described, it is next put on an arbor jutting out of the motor and this turns the bearing's inner wheel at 1800 or 3600 RPM. At the same time, the worker presses on the outer wheel and again, by the way it feels and sounds, he determines whether there are defects in the grooves where the balls ride. Acquiring skill in this job is defined by acquiring "the feel" of whether a bearing is good or bad and this is no different for a blind than for a sighted worker. Also,

acute hearing and the ability to discriminate small differences in sound is very important to this job.

Likewise, in a *roller bearing* plant, the cup or outer race of the bearing is inspected for size. This is done by use of an electronic gauge which gives one sound if the size is satisfactory, another sound when size is unacceptable. The worker picks up each bearing from a conveyor line, inspects it, puts it through a magnetizer to eliminate static electricity, and from there the piece shoots into a basket of finished work. The work must be done rapidly since each piece is handled for only two to three seconds. However, if there is an error, he may do a primary or rough adjustment; if finer adjusting is needed, the bearing is passed to another worker for that. On the average day, the worker handles about 7,500 pieces. Excellent manual dexterity and immediate response to the sound cue are required.

Two workers test *various machined parts* by the use of go-no-go gauges. Such gauges are designed for each inspection job, but the principle is that each part must fall between certain tolerances, therefore it must go through one part of the gauge and not go through the other. Some of these gauges report to the seeing person on a color scale, but have been adapted for the use of a blind person by emitting tones which give the same information to the inspector. Braille micrometers may also be used. Since the parts to be inspected and the gauges used vary considerably, there is little monotony, and sometimes further variety is brought into the job by temporary assignments which involve drilling or deburring rough spots on certain parts. These workers must not only use their hands quickly and smoothly, but must show some facility in transferring among a small group of related jobs, some of which require the use of tools or even power equipment.

In testing *oil or water pumps* (replacement parts for automobiles), the first step is to determine whether the shaft turns freely, and this is done simply by turning it by hand. Then the pump is put on a fixture which submerges the end in oil and a motor is turned on to test whether the pump functions at the specified number of pounds. A sighted person would read this pressure gauge visually, but it can be done tactually since the gauge is quite large. However, our interviewee believed that partial sight was necessary at this point in the process. This worker also does some spraying of parts with anti-rust mixture. This is done by setting up the parts in a spray booth, turning on the fan which draws up the excess, and simply pointing the nozzle of the spray equipment at the parts until they drip. Packing and wrapping of parts may also be required at times.

One girl who works for a pharmaceutical firm picks bottles from containers which come down a conveyor belt and puts them on another conveyor belt to be filled. She is listed under inspectors because,

as she transfers them she must also inspect the *bottles* to be sure they are in no way marred. It is her job to throw away imperfect bottles. The work must be done rapidly, requires a lot of energy, and careful attention under rather monotonous conditions.

One man *tests metal* when it comes out of the furnace to see whether it is hard or soft. As soon as the metal pieces are cooled, they are brought to his bench and he runs a file across each piece three or four times. If the piece is too soft, the file will dig in and the piece must be scrapped or rehardened by another trip through the furnace. This job is quite monotonous, but since proper hardening of this metal is extremely important, every piece which comes from the furnace must be hand tested in this way. Again, getting "the feel" of the right hardness is important and the individual must be tuned to make rather sensitive tactual judgment and must be willing to take a great deal of responsibility in making this judgment.

A final example of a rather different inspection task is that done by a man who *inspects shoes* for tacks on the inside. The shoes come down a line to him on a rack. The rack has four shelves and six shoes on each shelf. He picks the shoe off the rack with one hand, holding the shoe by the bottom of the heel. He sticks the other hand into the shoe and feels around the edge and down the center for tacks which may be stuck through the inner sole. If he finds a tack, the shoe must go back to the operator who made it for correction. This is strictly a hand job where sensitivity of fingers is important and this sensitivity must be used with considerable speed of movement.

Employers: Various manufacturing organizations.

Hours: 40 to 43½ hours per week.

Assistance—Supervision: One worker reported that occasional help in soldering would be offered by fellow employees when he was having special difficulty. Another reports assistance in sharpening tools or adjusting equipment, this latter likely to be given by his supervisor. Another reports that when bins of parts are put on the conveyor for him, they call to let him know; a sighted worker would see that the work was for him. In one case, the supervisor sets up the job, that is, reads the blueprint, gets out the correct gauges, and gets the worker started; the supervisor would not have to do this with a sighted worker. In several cases, work tickets are read, or production is recorded by fellow workers.

Equipment, Adaptations, Records: A great variety of standard tools, gauges, and power equipment are used by these people without adaptation. Several reported use of gauges adjusted to give sound signals instead of visual signals. Another man has obtained an especially large meter to measure pressure and slightly adapted it so he can read it by touch. In one case, a fan which removes filings from

the work space was raised to avoid possible injury to the blind worker; and in another case, the company added an extra metal strip along a conveyor to protect the blind worker's fingers from being caught under the belt. The chief records are production records, usually filled in on forms by fellow workers.

Travel: To and from the place of employment only.

Vision: Some of these jobs are done by totally blind workers, but in cases where gauging and adjusting is required, or visual inspection for damaged bottles, some sight is necessary.

Education and Training: The man who uses a great deal of mathematics in his work is a college graduate. One other person has two years of college, but there is no evidence that this amount of education is necessary to his work. The others are high school graduates, except for one with ninth grade and one with only sixth grade education. All report on-the-job training with time to proficiency varying from a week on the simpler jobs, to about three months.

Compensation: Varied from \$1.30 to \$2.90 an hour.

Auto Mechanic (Specialists)

Electrical Systems Repair	Instructor
Body and Fender Repair	Service Station—Repair
Carburetor Repair	Taxi Company—Repair

620.281, 825.281, 807.381, 620.381, 097.228, 915.887 (6, M, 33-59, vision varies from totally blind to limited reading)

Job Description: In a field with such great demand and such varied assignments as are represented by auto and truck repair, naturally some workers specialize. To do so usually requires employment in a large shop so that there is enough of one kind of work to make a specialty of it.

One man works only on the *electrical* parts of cars and trucks, the starters, ignitions, generators or alternators. Since he works for a state highway department repair shop, these electrical systems may be sent to the shop from anywhere in the state and they reach him in pans, brought by a stock boy. At times, the whole system is sent, while at other times he may work only on the generator or alternator.

He takes the alternator completely apart and washes it. Then he checks the bearings, collector rings, and rectifiers; if any of these parts are bad, he replaces them. In making these checks, he works chiefly by touch. For example, he would check the collector rings by feeling if there is any shock of electric current when he puts the two together; he does this with AC current. In checking the rectifiers, he uses DC current and he says his remaining vision is necessary in this. If he finds a bad collector ring, he takes it off and checks the

roller; if the roller is bad, that may be all that has to be replaced, but if the roller is not the part which is damaged, he puts a whole new collector ring on. For a faulty generator, he again begins by tearing the whole thing down; the armature, commutator, and field coils, brushes and bearings. After any of these electrical systems is reconditioned, it is put on a test stand to check it out before shipping it out of the shop.

In doing this work, he uses the standard tools of the garage or shop and occasionally he improvises a tool to fit his immediate need—as a mechanic will. He also uses a metal cutting lathe, generator tester, drill press and buffer, all standard except that he put a spring tension into the generator tester so that buttons pop up as an indicator. He can feel these or, indeed, usually hear them pop up. On another standard machine, he has marked the dial in braille.

Another man specializes in *repair and refinishing of auto bodies*, the repainting and rebuilding of wrecks. He owns the business and does all the buying, estimating, soliciting of business, and record keeping. He also does the majority of the repair work, but he does have one body machinist who works for him and also drives him wherever he must go as part of his business.

When he straightens a piece of body metal, he must first determine the angle at which the car was hit. If it needs jacking out, he jacks it in the opposite direction as far as he thinks it should be, then works with hammers and dollies to get it as close to the contour as he can. Then he uses lead or plastic to fill the low places. Finally, he files it with an 18-inch file to flatten it and get the contour, then grinds out the file marks with a fine sanding disc.

Priming and fine sandpaper on a block give a perfectly finished contour. He comments that he relies fifty percent on experience, and twenty-five percent each on sight and touch—or perhaps the emphasis is on touch. The final step is to spray all parts with primer and, then, paint. This requires a rhythm of motion which he has learned from experience. This man also repairs the hulls of boats, using the same procedures.

Another worker does chiefly *carburetor repair*. The condition of the carburetor determines just what will be done with it. If it is merely worn from use, it is completely torn down and rebuilt with a new kit. If he cannot tell, from the outside, what is wrong with it, he may take air jets and blow air through it; if some of the passages are blocked, this can help to determine the trouble. If it is flooded or running over, this is an indication that the carburetor float is too high, letting too much gasoline in, or the needle valve which controls the flow of gasoline is either worn or sticking. Something as small as a grain of sand can hold this open and let the gasoline continue to flow, but to find it quite definitely you have to take it apart and gauge the float to the specifications of the particular car from which it

came. There are no two carburetors on which the float level is the same unless they are identical carburetors.

Usually the first step toward repair is totally dismantling the carburetor. Then the parts are soaked in acid to clean them, scrubbed, and put in mineral spirits to neutralize the acid. Then damaged parts are replaced, buffing or grinding may be done, the whole is reassembled, adjusted, and tested. Carburetors vary greatly in complexity and the number on which he works in a day depends upon the type and how elusive the trouble is. This is not an assembly line type of job. Each day's work is different and the time required for each is different, and there is rarely pressure for speed unless an emergency job comes in. His work and his materials are brought to him from the stockroom, but he does have to get his foreman to order needed supplies and record the time he spends on each job.

One man took a training course in auto mechanics, and at its close, was invited to stay on at the school as an *instructor*. His particular part of the training course is teaching how the various parts function, where each part fits into the engine and what its purpose is. He has fifteen or sixteen boys in his class and teaches and works with them for an eight-hour day, five days a week. Each morning, he assigns a job to each boy or, at times, two boys working together. Through the day he observes, questions, teaches and moves the boys on to the next job as they become ready for it. He covers all parts of the transmission, engine, differential, starter, generator, front wheels, and brakes. He gives the boys oral tests. When a boy is absent, he reports this to the office and the secretary makes the necessary record.

The *owner of a small taxi company* spends most of his time on maintenance. All driving is, of course, done by men he employs, but he keeps the cabs clean, polished, and in good working condition. Along with this, he supervises his drivers, and, with the assistance of his wife, manages the records necessary to a small business.

Another person who is self-employed is the *owner of a service station*. He supplements the income from sales by doing some motor rebuilding, tune-up and brake work.

Employers: State highway departments, a training school, and self-employed.

Hours: Employees work 40 hours per week. Self-employed persons may put in 11 or 12 hours a day, at least during busy seasons.

Assistance—Supervision: All these people tend to leave reading of work tickets, filling out work sheets, and other records to others, usually foremen or family members of those who are self-employed. One man reports help in soldering heavy connections.

Equipment, Adaptations, Records: All use the standard tools of the garage: wrenches, screwdrivers, pliers, drills, all sorts of gauges, meters, hammers, taps, etc. There is frequent use of buffers, grinders, occasionally a lathe, the sander, and in one case spray paint equipment. The generator tester adapted by a tension spring to make buttons pop up as an indicator is the major adjustment reported. Dials marked in braille or notched are reported by several people. Records of work completed, time spent, materials needed, and perhaps cost are usually kept by seeing persons for these workers.

Travel: Only one man has to travel other than to and from the place of work. The man who works on auto bodies must sometimes go out to give estimates; he has his employee drive him on these trips.

Vision: The instructor and the body repairman have, and appear to need, some useful vision. In the other jobs, totally blind persons are successful.

Education and Training: Actual education of this group varied from high school junior to one year of college. Only two had formal training as mechanics; the others learned entirely on the job.

Compensation: Varies from \$70 to \$150 per week.

Auto Mechanic (General) 620.281 (7, M, aged 30 to 63, four totally blind, three with vision varying from object perception to limited reading)

Job Description: In a culture as largely motorized as ours, the auto or motor mechanic is very important to keeping things moving. He may work only on passenger cars, or he may also be skilled on buses, trucks, trailers, heavy road equipment and even boats. In large repair centers, such as those of state highway departments, the work may become very specialized. Several of these areas of specialization are described under separate titles in the following sections.

The general auto mechanic is a very versatile person who can handle almost any automotive repair problem other than body and fender work. No one of the people interviewed does all the operations about to be described, but all handle a large number of them.

Often, one of the first things to be done when a truck comes in for repair is a steaming operation, because the vehicles are used on dirt roads and become encrusted with mud; the steaming does a basic cleaning of the whole truck. A steam jenny which is gas operated is used. The operator turns a switch which starts water through the coils and gas automatically comes on to heat the water. After a brief wait for the heat to increase to the point of producing steam, the operator directs the steam at the truck through a long nozzle. It takes twenty minutes to a half hour to steam clean a car or truck.

Next, the car or truck will be torn down, or sections removed, in order that each can be subjected to appropriate repair procedures. These sections, head block, rears, transmissions, parts of the motor, etc., must then be run through a degreaser before the mechanic works on them. After taking the sections out of the degreaser, he may use a wire brush on the parts, if necessary, to complete the cleaning job. The worker takes the sections, such as the motor, apart and tries to determine what is wrong. If he cannot find the trouble, he may at this point call upon sighted fellow workers or the supervisor for advice. Then he orders the necessary parts for the repair of that particular section and rebuilds it. Hearing is often important to finding the trouble, doing tune-up work. A compression test may be made to test the rings and valves. Working with pistons and rings, tearing heads down and grinding valves, can all be done by a combination of touch and hearing.

It is important to keep the tools in line in a very orderly fashion so the worker can always quickly find the tool he wants. Each worker develops his own system, depending on his work space and preferred tools, but some stable organization is absolutely necessary to efficiency. Being able to recognize parts by size and shape, good dexterity in using tools, and a willingness to work at night or over weekends—in other words, during less preferred hours—help to establish the worker, especially if he is running a business of his own.

Employer: State highway departments, garages, and self-employed.

Hours: Usually 40 hours a week in highway departments, but there may be seasonal overtime. Self-employed persons often work long hours, work at night or over weekends to take care of emergencies and thus attract customers.

Assistance—Supervision: Some interviewees use some assistance from fellow workers or the supervisor to find the trouble they must repair. Those in business for themselves usually have helpers, not only to assist in repair work, but to move cars about. Assistance with orders, written records, and billing (for the self-employed) is given by sighted persons. Sighted person may inspect work on completion.

Equipment, Adaptation, Records: Use all standard tools and equipment of the garage trade, including valve grinding machine, head refacing machine, riveting machine, wrenches, sockets, bushing removers, files, buffer. One person had devised a special timing tool which could be used only on Chevrolets. Records include production records, orders, and for those in business for themselves, all the bills, etc. of a small enterprise. All of these are usually handled by sighted persons for the totally blind members of this group.

Travel: Good mobility in the garage or other work area necessary.

Vision: Totally blind workers are successful in these jobs.

Education and Training: Group varies in education from fifth grade through high school graduation. One has vocational school training and most have been trained specifically on automobiles either in a school or in an apprentice relationship.

Compensation: Roughly \$75 to \$130 a week.

Transmission Repairman 620.281 (11, M, ages 26-46, six are totally blind or have only light perception, four have travel vision and one can do limited reading)

Job Description: Often that vital part of a car known as the transmission must have special attention. Although our interviewees did occasionally remove transmissions most of them did not do this under-the-car work. The transmission was usually brought to their work space where they begin by tearing it down or disassembling it, and trying to find where the trouble is. This inspection is done mostly by touch which tells when a part is bent, when an inner planetary is pitted, when a valve sticks. Hearing is also very helpful in this stage of the work. They clean all the parts, replace those which are worn or otherwise defective, and reassemble the transmission. In doing this work they may use gauges and micrometers. Some order, and others actually buy, the parts they need.

One man specializes in the Powerglide transmission. Another specializes in the valve body, which is part of the transmission. He takes this valve body completely apart, washes each valve, each spring, each screw and plate. Sometimes it is so dirty it has to be soaked in carburetor cleaner for a while, then blown dry with an air hose. Then he rebuilds the part and if a spring is bent or has lost its tension he replaces it. Sometimes he finds a valve has a little burr on it and because this mechanism works on such close tolerances, such a burr will hinder that valve from working properly and affect the whole transmission. Sometimes the worker must decide whether repairs are practical, because they are so extensive and therefore costly.

These men work on intricate mechanisms where a smooth final performance depends not only upon each part's being free from defects, but upon all working together in perfect timing. A high level of mechanical ability is required for the job.

Employers: Transmission repair shops and a city garage.

Hours: 40 to 46 hours per week.

Assistance—Supervision: Most of the work is done quite independently, but some help in finding trouble, writing work tickets, or perhaps finding misplaced tools may be necessary. One worker reports a

need for help in putting one type of housing and body back together since there is not space enough to get a finger between and sight is therefore necessary to engage the two. Supervisors tend to take responsibility for conveying information from work tickets and briefing workers.

Equipment, Adaptations, Records: All use standard transmission tools. One designed a special tool for clutch teardown and assembly and has had it patented; it is adaptable to all makes of transmissions and can also be used for bushing and bearing presses. One reports that he can get much information by tapping parts with a little hammer and judging by the sound. One got a spring and heated it with a torch, bent it, and put two hooks on it to pull out valves. Records and work tickets are often kept by sighted fellow workers or the supervisor but one person keeps them in braille and just reports regularly to the office.

Travel: Chiefly to and from the place of employment, but good mobility in the shop is desirable.

Vision: Totally blind persons are successful in this work.

Education and Training: Although most of these workers are high school graduates, and several have a year or two of college, one has only third grade, plus transmission school. Most of them had some formal training in transmission work prior to on-the-job training. Having had some vocational training in high school was regarded as desirable background.

Compensation: Varied from \$59 to roughly \$120 a week.

Mechanic, Mechanic's Helper, Repairman 621.781, 600.280 (18, MF, ages 25 to 56, vision varies from totally blind to limited reading of ink print)

Job Description: Although the people described in this group work on objects as different as safety goggles and aircraft engines, they all perform the same essential functions. They tear down, or take apart some motor, mechanical device, or piece of equipment, discard the parts which cannot be used again, clean and polish the parts which can be reused, and put the object together again with new parts replacing those which were discarded. These skills could probably be used on any equipment which can be repaired, but our group worked on: aircraft engines, aircraft accessories such as radar equipment, fuel pumps, other parts of fuel systems, the air system of diesel engines, electrical components of missile systems, oxygen regulators used at high altitudes, respirators, goggles, face shields, welder shields and other safety equipment, chain saws, lawn mower motors, out-board motors, garden equipment, auto transmissions and other parts of autos and trucks, motorcycles, and power tools.

In general, this work requires the complete overhaul of the equipment, not merely finding a malfunctioning part and replacing it. Tools are used constantly both in tearing down and in reassembling, and often machine tools such as drills, grinders and sanders are used. In most cases no adaptations were reported, but several did indicate that they had made scratches or similar tactual cues to position tools better or to read meters. One reported electrical testing equipment which had been adjusted to buzz, that is, give a sound cue, in place of a light. There is general agreement on the importance of organization and order in the work space, since the misplaced tool or lost part costs valuable time. Some of the group reported secondary duties, such as repair to tools, cleaning up the work space, ordering parts, or assisting customers.

This work requires a good bit of dexterity for even the simplest jobs, and excellent mechanical ability for the most complex. Good tactual discrimination is constantly emphasized, since these workers distinguish dozens of parts by touch, determine whether parts are clean, whether lenses are nicked, when components are damaged—all by touch. A keen sense of responsibility and large quantities of patience can also be important qualifications.

Employers: Government installations including army depots, navy yards, and air force bases; highway departments; marinas; manufacturers of various types of equipment; sales and distribution centers for such equipment. One person was self-employed.

Hours: Usually forty hours per week, occasionally 45 hours. The self-employed person works longer hours during the busy season.

Assistance—Supervision: Little or no assistance was reported in doing the job itself. Fellow workers or the supervisor sometimes brought parts, or took care of occasional tasks which required use of some machine tool which the blind person was not allowed to use. Often the blind worker felt he could have used this tool if the employer had permitted. One worker had the assistance of a fellow employee in making a record of work done for the employer.

Equipment, Adaptations, Records: With rare exceptions, standard tools and power equipment were used without adaptations. Several workers reported making some type of mark on tools or equipment so that they could identify a certain spot on a meter or position on a tool. One man had changed his electrical testing equipment so that it gave a buzz instead of showing a light. On the whole, this group kept few records. Some recorded identification numbers of motors, etc., on which they worked or kept a count of the number of pieces completed each day, usually using braille for these personal records.

Travel: To and from the place of employment only.

Vision: Totally blind persons were successful in this work.

Education and Training: Most of this group were less than high school graduates, some had as little as third, fourth, and fifth grades only. However, two had had a couple of years of college which appeared not to have contributed to job success.

Compensation: Varied from \$50 to \$130 per week.

Book Trimmer 640.885 (1, M, 33, can do limited reading)

Job Description: When books and magazines are first assembled at the end of the printing process, their pages are uneven and present rough edges. In order to achieve the smooth and even edge to which you are accustomed, they must go through a paper cutting machine, often called a trimmer.

A skid load of books are brought to the worker. He straightens them roughly as he puts them on the conveyor. By the time the conveyor brings them within a foot of the cutting edge, he must have the books completely straight, which he does chiefly by touch. He can, for example, determine by touch whether some are upside down. He has also learned to pick up two at a time, which makes the job easier. After the books are trimmed, he stacks them for wrapping and ultimate shipping. He works exactly as a seeing person would except that he uses touch, as much as vision, to straighten his work.

Employer: A printing company.

Hours: 37½ hours a week.

Assistance—Supervision: No assistance is required and supervision is general

Equipment, Adaptations, Records: Uses trimming machine without adaptation. No records.

Travel: To and from the place of employment only.

Vision: He has sufficient vision to distinguish ink print under favorable conditions. It is not evident that he uses his vision much on the job.

Education and Training: High school graduate but this is not necessary to the job. This job is regarded as very simple, can be learned in one work session.

Compensation: \$1.90 per hour.

Book Skidder (Bindery Worker) 643.885 (1, M, 31, travel vision)

Job Description: There are many rather complex and specialized processes in the printing and binding of ink-print books. After the printing is done, groups of pages are assembled and a large machine puts

these groups of pages in order so that the complete book comes out the end of the machine.

These complete, but loosely assembled, books come down a conveyor to our interviewee who picks up each one, jogs or taps each one so that the pages are all even, and piles it on the skid which stands behind him. When the skid is filled, he must take it to the girls who sew the books.

This is an active job, in which he must try to keep up with the conveyor. If he does not work quickly, the girls who sew the books might have nothing on which to work, so he is in a key position. A whole chain of jobs which follow his would be affected if he fell behind. Energy and resistance to monotony are necessary to the job. Some vision is also necessary since it is important that he see it if a book falls off the conveyor; also, some vision makes it safer to move the loaded skid around the work space where there can be obstructions.

Employer: Printer and bindery.

Hours: Standard work week.

Assistance—Supervision: No assistance and little supervision except that the girls who do the next operation know if his work has not been well and promptly done.

Equipment, Adaptions, Records: Only equipment used is the skid on which he transports books. No adaptations or records.

Travel: Must transport loaded skids around the work area.

Vision: Must have sufficient vision to make the transportation of loaded skids safe in an area where obstructions may occur. Also, must be able to note if a book falls off the conveyor.

Education and Training: Is a high school graduate, but this formal education is not required for the job.

Compensation: \$1.60 per hour.

Veneer Clipper 663.835 (1, M, 55, light perception)

Job Description: Plywood, so familiar and versatile, is made by laminating three or more layers of very thin wood, called veneer. Veneer is formed by fastening a log into a machine which turns it against a knife. As it is turned, the knife shaves off a very thin but continuous piece. This piece is, however, likely to have holes or bad spots in it which cannot be used in the plywood.

This worker takes the pieces of veneer and cuts out all the bad spots—or perhaps one should say that he cuts out the good and discards the bad. To do this, he uses a “fishtail” saw which weaves

in and out to keep all the good and eliminate all the bad from a given piece of veneer. He must, of course, identify the bad spots tactually. He piles the good part on trucks to be moved on to the next process.

Employer: Plywood manufacturer.

Hours: Standard work week.

Assistance—Supervision: Since he has been doing this work for some years, and was employed in the plant prior to his loss of vision, he requires little assistance or supervision.

Equipment, Adaptations, Records: Uses "fishtail" saw. The company welded a piece of iron at one point so he could not get his fingers in the way of the saw blade; also a piece of sheet iron is so placed that pieces of wood cannot strike his face. Also, all workers with this equipment wear goggles. No records.

Travel: To and from the place of employment only. He travels about the plant only with his partner because of dangerous obstructions.

Vision: Light perception only.

Education and Training: High school graduate but his chief preparation came from prior acquaintance with the work in the plant and brief on-the-job training for this assignment.

Compensation: \$2.38 per hour.

Woodworker (own shop) 664.782 (1, M, 43, totally blind)

Job Description: Creative art and the craft of a technical worker can be combined to make original, beautiful and useful objects of wood. Trays, hors d'oeuvres servers, lamp bases and similar decorative objects to be sold in gift shops, may build a business if they are attractive, well made and unusual.

Our interviewee orders lumber which must first be inspected to be sure there are no cracks or bad spots in it; his son helps him with this visual inspection. From that point on, he functions independently. He cuts the lumber to the size and rough shape he wants. Then, with various hand tools and a lathe, a planer and a joiner, he makes the object, sometimes gluing pieces together, sometimes drilling or sawing. For final smoothness, the piece must be sanded and perhaps filed, then stained and varnished. He sells these objects in a small shop next to his workplace, in his home. However, during the summer months when vacationers flood the area in which he lives, he expects to sell his products through other gift shops in neighboring resorts.

This man already had a knowledge of woodworking on a hobby level before starting this enterprise so that he knew well the kind of

manual skills which would be needed. For success, one needs real skill in using tools and woodworking equipment, good tactual discrimination and dexterity (although not necessarily great speed). One must be a good craftsman who enjoys finishing a piece to smooth beauty. And it is helpful if one has originality so that new designs and even new products can be originated. Some ability to sell and to manage a small business is also important.

Employer: Self-employed.

Hours: Works about 50 hours a week.

Assistance—Supervision: Requires assistance in visual inspection of lumber in order to avoid bad spots which might not be evident to touch. Has no supervision.

Equipment, Adaptations, Records: Uses typical woodwork tools including rasps, files, scribe, awls, hammer, hand and power saws, drill press, sander, lathe, planer and joiner, equipment to glue pieces together. Some of his jigs and a duplicator are adapted to his lack of vision. Thus far, he has kept only mental records, but it is obvious that some simple business records will be necessary.

Travel: None.

Vision: A totally blind person is successful in this work.

Education and Training: This man is a high school graduate and had special training both with Veterans Administration and with a competent blind woodworker. In addition, he had always worked with his hands.

Compensation: Business is too new to be sure of income.

Dowel-Machine Operator 665.782 (1, M, 52, travel vision)

Job Description: A dowel, or dowel pin, is a piece of wood, usually round, used to hold two other pieces of wood together. For example, doors and window frames are held together by dowels. The making of dowels involves at least two steps: (1) cutting the stock, or lumber, into rods, and (2) rounding these rods to dowels of the desired diameter.

The worker receives an order showing how many dowels he is to cut and of what diameter. He then sets up his machine by selecting from among his supply the proper "head" to cut dowels of the desired diameter, and installing this head into his machine. The heads simply screw in place and the machine can also be adjusted by raising and lowering of wheels to position correctly the knives, guides, and feed tools for that diameter. His supervisor may verify the distances of settings and sizes of stock by the use of calipers or micrometers.

The rods are then put into cold water before they can be run; when they are ready to cut a little light goes on and he can see this. Then he feeds them into the machine which automatically turns them into dowels by forcing them through the cutting head. Finally, they are removed from the machine.

The worker must go a short distance for his stock and truck it to his work place. Sometimes he operates another machine to cut the rods, or blanks, for the dowel-machine. He also washes his machine and generally cares for it; a knife must be used to clean the head.

Employer: Equipment manufacturer.

Hours: 40 hours per week.

Assistance—Supervision: The supervisor checks his set-ups before he starts running a new job but presumably if he could use a brailled micrometer he could do this for himself. His work, like that of others on the same assignment, is regularly checked by inspectors.

Equipment, Adaptations, Records: Uses dowel-machine and at times uses a machine to slice lumber into rods. Uses knife to clean head. He makes a slip out each day to show hours and production; can use pencil for this.

Travel: Must be able to pick up his own stock, traveling a short distance within the department to do this.

Vision: Has good travel vision; it is not clear whether this would be required but he seems to feel that some visual inspection during production is necessary.

Education and Training: High school graduate but the chief preparation was on-the-job training.

Compensation: \$2.25 per hour.

Rope Laying Machine Operator 681.885 (1, M, 46, can read ink print)

Job Description: Rope is made by twisting three strands of material together. The weight and thickness of the original strands of course determines the strength of the rope and many variations in this are possible.

When the worker is informed upon what weight or thickness of rope he is to work, he brings, from the supply area, three reels or bobbins of the appropriate strands. These he mounts in his machine. He threads the strands from the three reels through guides into the twisting mechanism and splices the strands to a lead rope attached to a take-up reel. Then he starts his machine and monitors the product to be sure the three strands are feeding evenly and that the rope, which is going onto the take-up reel, is of good quality. He must be able to see enough to do this inspection visually. If he thinks the

rope is not of acceptable quality, he must stop the machine and either make adjustments or call the supervisor. He must also readily stop his machine when the specified length has been produced. He then cuts the rope with a knife and binds the coil with cord to prevent it from unwinding. He removes the filled reel from his machine so that it can be taken on to the next process. He may also have to return the three bobbins to the supply area if he did not completely use the material on them. When a bobbin, or reel, runs out during the ropemaking, he must be aware of that and immediately replace it, threading the new strand into the twisting mechanism.

Employer: Manufacturer of rope.

Hours: Standard work week.

Assistance—Supervision: Needs assistance only if something goes wrong with his machine. Does no maintenance.

Equipment, Adaptations, Records: Uses rope laying machine without adaptation. No records.

Travel: Must be able to bring bobbins from supply area.

Vision: Must be able to inspect finished rope as it goes on pick-up reel. Must also be able to determine when bobbin is running low so he can quickly replace it.

Education and Training: High school graduate but it is not clear that this education is required for the job.

Compensation: \$1.95 per hour.

Beam Preparer (Textile Industry) 681.886 (1, M, 48, vision adequate to read large print)

Job Description: In the textile industry, the thread from which cloth will be woven is a precious ingredient. A flaw in the thread produces a flaw in the woven cloth, and such imperfect cloth must be discarded or sold as "second." Consequently the large spools upon which the newly manufactured thread is stored and later carried to the weaving room must be in excellent condition. These large spools are called beams and the man who prepares these beams for use is a specialist.

He places the beam, which is of course used over and over in the manufacturing process, on a lathe type machine which turns the beam as he works on it. While it turns on this machine, he removes all rust, grease or nicks—anything that might catch or damage the thread. He must also watch to be sure the barrel of the beam is not out of line. To get each beam into top condition, the worker may use files, sand paper, solvent or cleanser, and cleaning equipment. Each beam has a number and he must record the numbers of the beams on which he works each day since he is held responsible for their leaving

his hands in perfect condition. As he finishes with each beam, he transports it on a two-wheel hand truck to an elevator which carries it to the next work area for use. He also assists in cleaning the work area.

Employer: Textile mill.

Hours: 48 hours per week (overtime).

Assistance—Supervision: Receives little supervision since he has been in the job a long time. No assistance.

Equipment, Adaptations, Records: Lathe type machine which turns beams, files, sand paper, sandblocks, solvent or cleaner, routine equipment used in cleaning area. None adapted. Records numbers of beams on which he works each day.

Travel: Must be mobile in work area to move beams on trucks.

Vision: Uses vision to read the number identifying each beam—about $\frac{1}{4}$ inch high. If he could not read these, someone would have to do this for him but he might be able to handle other aspects of the job.

Education and Training: Is a high school graduate but it is not clear that this amount of education is necessary. Chief training on the job.

Compensation: \$5,000 per year.

Production Technician (Wire Cutter or Lead Former) 691.885 (1, M, 47, light perception only)

Job Description: Data processing equipment has already changed, and is rapidly still further changing, the world in which we live. Day by day, new applications are found for data processing, from very simple to very sophisticated applications; similarly, the machines themselves vary from relatively simple to extremely complex. What they have in common, however, is the use of a great many wires, usually color coded in the standard code of electricians.

One man spends most of his time preparing such wires. He cuts wire of the indicated color to prescribed lengths and he may strip the ends of the wires if so ordered. Each order is different. He tapes each group of wires, a certain number in the group, to hold them together until they are used. In doing this work, he uses an electric wire cutter and a few hand tools.

At times, he prepares other items which combine to make up the machine. Also, he may dismantle equipment which comes in for repair or adjustment. Occasionally, he assists in taking inventory in the storeroom. In some ways, his job may seem monotonous, but it is very important that he do it accurately and quickly, or other production workers will be delayed in their work. He works at a desk or bench, has to move about only to go for supplies of wire.

Employer: Manufacturer of data processing equipment.

Hours: 40 hours per week.

Assistance—Supervision: The senior technician reads each order to him and, at times, he may have to ask for help in identifying the right color of wire to be used. Supervision is not close, but all work is inspected.

Equipment, Adaptations, Records: He uses an electric wire cutter and hand tools such as measuring equipment, a brailled ruler, tapes to bind bundles of wires, a wire stripper to clean the ends, Allen wrenches, and a special screwdriver needed for adjustments. The screwdriver is special for use on this machine, not for his blindness, and except for the brailled ruler, none of these tools are adapted. He keeps no records.

Travel: Minor travel to get wire supplies—just down an aisle.

Vision: Has only light perception; vision appears to play no part in job.

Education and Training: He is a high school graduate and had some vocational school training; however, it is not evident that this is required.

Compensation: \$350 per month.

Sleever (Lead Former) 691.835 (1, M, 41, totally blind)

Job Description: In the making of electrical equipment, it is often necessary to cover, or insulate, areas where wires are soldered together or a lug is attached to the end of a battery cable. This is accomplished by putting a "sleeve" over that area.

The machine, which is called a sleever, has what might be described as two bills, rather like duck bills. The worker slips a piece of sleeving (warmed by a heat lamp to make it more flexible) over the two bills. Then he presses a foot pedal and air pressure forces the bills apart, stretching the sleeve. The worker inserts the cable up to the point which is to be covered by the sleeve, slips the sleeve over the area to be protected, and pulls the cable out of the bills. His parts are brought to him and his finished work removed by stockboys.

Employer: Manufacturer of electrical equipment.

Hours: Regular work week, plus some overtime.

Assistance—Supervision: Requires no assistance except in getting through the plant, the company does not wish him to travel alone because of many hazards. Supervision is automatic in that the accuracy of his work is roughly checked by the next operation.

Equipment, Adaptations, Records: Used sleeving machine, heat lamp to warm sleeves. Turns in work slips to indicate production.

Travel: Independent travel only to and from the plant; in-plant travel with a guide at company's request.

Vision: Totally blind.

Education and Training: High school graduate, but this education is not required for the job.

Compensation: \$5,400 to \$5,900 yearly dependent upon overtime.

Broom Stitcher 692.782 (1, M, 25, can read ink print)

Job Description: One of the most important operations in the making of that common household article, the broom, is stitching. Before the stitcher goes to work, you might scarcely recognize the broom, for it is a formless collection of broomcorn fastened to the end of a handle. It is the stitcher who gives it shape, and fastens the broomcorn firmly into position so that it can be used. House brooms are usually given five lines of stitching with heavy, colored cord. Warehouse brooms get only three lines of stitching, but they also have a steel band. Toys for children, or whisk brooms have only two or three lines of stitching.

The broom stitching machine has two needles, each about 12 to 14 inches long, and these are worked back and forth by arms hooked onto two slide bars. The machine also has three foot pedals, through which it is operated: one to control the sliding up and down of the broom, one to lock the broom into the vise, and one to push broom and vise into the starter.

The worker sets up his machine for the particular kind of brooms he is about to make, by inserting the proper vise to hold the broom during stitching, attaching a ratchet and turning a lever to set the number, rows and length of stitches for that job. Then he inserts and clamps the brush end of the broom in the vise. He cuts the specified length of cord or twine for each line of stitches, using a knife for this purpose.

He wraps the cord around twice and ties a half knot. When he throws the vise in, to start the machine, he must at the same time throw the cord around the looper so that the needle, coming through, will pick it up. The machine then stitches automatically, and also stops and cuts off automatically at the end of the broom. He must go through this process for each line of stitching on the broom.

The skill of this job lies in keeping the machine working smoothly, knowing just when to put the broom in and when to take it out, when to rethread the cord, when to wrap it, and when to throw it in gear to work faster, yet make better brooms. Sometimes the needles develop burrs and break the cord, in which case the stitching will have to be redone. The worker must keep his needles filed and sanded

so that they will not break the cord. The company has a person to do this, but some of this care is given by the stitcher himself. Generally speaking, knowing your machine well enables you to work faster, and since you are paid on a piecework rate, this is important. The job requires strong hands, accurate movements, and considerable energy.

Employer: Broom manufacturer.

Hours: 40 hour week.

Assistance—Supervision: Requires no assistance. All brooms are inspected, and if they have not been correctly stitched, they are returned to the worker.

Equipment, Adaptations, Records: Uses broom stitching machine without adaptation. Uses a few wrenches and simple tools to adjust the machine. Marks on pad how many brooms in each lot, and reports this to the foreman at the end of the day.

Travel: To and from the place of employment only.

Vision: This man can read some ink print, but this work is done successfully by totally blind persons.

Education and Training: A high school graduate, but this formal education is not required for success on the job.

Compensation: \$1.25 per hour plus production bonus.

Die Press Operator 699.782 (1, M, 39, limited reading)

Job Description: Paper products of special shapes, such as envelopes, are cut by pressing a die through reams of large sheets of paper. The paper is of varying weights and stiffness, some making ordinary white letter envelopes, some making the heavy kraft envelopes used to carry bulky contents through the mail. A ream (500 sheets) of such paper may weigh as much as 60 pounds. The die, which may also be very heavy, is a metal piece so designed that it will cut 24 to 40 envelopes from one sheet of paper, depending on the size of the envelopes. Its cutting edges are razor sharp, so it must be handled with great care.

The worker receives his order schedule from the office, and this tells him how many envelopes he is to make of each size, weight and color. A paper handler brings the necessary paper to him, but the worker is responsible for making sure he has the correct material. He is also responsible for seeing that he has the appropriate die for cutting that particular order of envelopes, and that this die is adequately sharp to do a good job; if it is not sharp, the worker must take it to the die sharpener for attention. In short, the worker is

responsible for producing well cut paper which, at the next stage of production, will be folded into finished envelopes.

The actual job activity requires placing a ream (or, when smaller numbers are ordered, perhaps less than a ream) of paper on a cutting board, making sure the 500 sheets are square all around. The die must also be correctly placed in position. Then the cutting board and paper are pushed under the press and the machine pushes the die through the paper. Since the press is semi-automatic and continually goes up and down, the worker must determine when it is up so he can push the cutting board under it. Our interviewee felt that this part of his job required vision. When the die has cut completely through the paper, the cutting board is moved to the left of the machine, the die is lifted out, cut pieces are stacked on a table to be removed to the folding operation, and scrap is thrown into a bin behind the work space. Our interviewee also felt that vision would be necessary to be sure the right color paper was being used. Scrap paper, what is left of the large sheets after the envelopes have been cut out, must be put into separate scrap bins depending on whether it is white, manilla, or colored, because the scrap paper is baled and sold, and they get more money for bales of white, or manilla, paper. Bins must be changed to avoid mixing the colors of scrap.

Handling the heavy paper and dies requires a good bit of physical strength. Tactual discrimination is important to squaring up the reams of paper and accuracy of positioning is vital to correct placement of the die.

Employer: Paper products company.

Hours: 40 hours per week.

Assistance—Supervision: Order scheduler reads the orders for the worker who writes them in crayon large enough to see as he works through his day's schedule. No unusual supervision but quality of cut edges is observed in next stage of process.

Equipment, Adaptations, Records: Semi-automatic die press, dies. No adaptations. Makes a production report at the end of day, based on his crayon record.

Travel: To and from place of employment only.

Vision: Enough to position die accurately under press. Also must distinguish colors.

Education and Training: Is a high school graduate, but it is not clear that this amount of formal education is required for the job. Two weeks of on-the-job instruction and was up to production in three to four weeks.

Compensation: \$2.18 per hour.

Saw Sharpener 701.381 (2, M, ages 34-79, totally blind)

Job Description: For the person who enjoys working with tools and power equipment, enjoys an exacting technical-service occupation, yet wants to have his business in his own home, the trade of sharpening saws may provide the ideal answer.

Saws arrive at the shop in various conditions, some needing only to be filed and sharpened, others in such bad condition that the old teeth must be chopped off and new ones cut in. The first step, therefore, is a close examination of the saw to determine just what must be done. If he finds it in very bad condition, he phones the owner who may decide it is not worth repairing.

In repairing hand saws, he uses mainly touch; he has a machine which moves the saw along, one tooth at a time, and he must file and sharpen each one, sometimes using an emery wheel powered by an electric motor. He also uses the emery wheel to sharpen the blades of lawn mowers. He is willing to sharpen lawn mowers, knives and scissors, and all kinds of saws except chain saws. One interviewee is also a gunsmith and does some upholstery work.

As is true for any small business, there is some record keeping and billing to be done. Members of the family help with this.

Employer: Self-employed.

Hours: Varies depending on amount of work to be completed.

Assistance—Supervision: Need assistance only with record keeping. One might say that supervision is provided by the satisfaction of the customers.

Equipment, Adaptations, Records: Standard tools such as hammers, files, pliers, nail pullers, screw drivers; also power tools such as the emery wheel, spindle, machine to chop teeth off of saws, machine to turn the saw and hold it in proper position.

Travel: None.

Vision: Totally blind people are successful in this work.

Education and Training: Both men are high school graduates, but it is not clear that this is necessary to the work. Technical aptitude appears a more important qualification.

Compensation: Varies from \$45 to \$80 per month.

Sander, Buffer, Polisher 761.887, 705.884 (7, M, ages 27-65, vision varies from totally blind to limited reading)

Job Description: That smooth and polished surface, which delights both eyes and touch on many manufactured articles, is usually the result of sanding, buffing, or polishing, or a combination of these. The three different terms refer more to difference in material used to produce

the smooth surface than to variations in procedure. The work may be done by hand or by power driven sanders or buffers, and the products upon which our interviewees worked varied greatly: gunstocks, propeller blades for boats, aircraft parts, cabinets, and "antique" furniture.

In any case, the object comes to the sander or buffer in relatively rough form; he may start his work on it by filing away some of the extra wood. Sometimes a piece, like the door of a cabinet, may have indentations or small holes which must be leveled with "filler," a putty-like material which fills the hole to produce an even surface. These holes are readily found by touch and the evenness of filled areas is accurately judged by sensitive fingertips.

The sander may be pneumatic or electrically driven, and the product may be held against it or it may be held against the product. One interviewee did "soft drum sanding" which requires choosing the drum of proper size to fit into the curves of the wood. Often the worker is also responsible for determining the grade of sandpaper for a particular job. Always, the worker must sand in the direction of the grain of the wood, which can be determined by sensitive touch. Touch, educated by experience, also tells when the piece has been sufficiently sanded or buffed. One interviewee did the sanding after the piece had been painted, preparing for a final layer of lacquer.

All of these workers had to develop enough versatility to help, at least occasionally, with other tasks, such as staining furniture, taking inventory, doing simple cleaning and maintenance on machinery, and keeping the work area in order.

Employers: Private manufacturing organizations.

Hours: Usually 40 hours per week.

Assistance—Supervision: All worked rather independently, but might at times ask a fellow worker or the supervisor whether a piece was sufficiently smooth, correctly rounded off, etc. Also, tallies of work completed were usually kept by other workers or by the supervisor.

Equipment, Adaptations, Records: All but one used some form of electrically or pneumatically driven sander or buffer and polisher. All also used some of the following: equipment for sanding or polishing by hand, planers, shapers, saws, hammers, files, none of which are adapted for lack of vision. One uses a jig to hold his work and this was specially made for him by the supervisor. This man also shields his tool with a small piece of formica so he can sand extremely close to veneered pieces without scratching them. The only records mentioned were tallies of work completed.

Travel: To and from the job only.

Vision: Totally blind persons are successful in this work.

Education and Training: The education of this group varied from sixth grade to completion of high school, but academic requirements seem to have little to do with job success.

Compensation: Varied from \$1.25 to \$2.25 an hour.

Deburrer (Burr filer, Bench machinist) 715.884, 705.887 (10, MF, ages 29-61, vision varies from totally blind to limited reading)

Job Description: If you have ever cut or scratched your fingers on the sharp edge of some metal piece, you know how important the work of the deburrer is. Any object made of metal through the use of drills, presses, lathes, and similar cutting machines and tools is likely to have rough, sharp edges. Such edges are not only dangerous to touch, but they prevent machine parts from fitting together smoothly. Therefore, the burrs must be smoothed down before the parts can be assembled into a product.

Our interviewees worked on metal parts for machines, aircraft, pumps, tractors, radio parts, missile parts, gears, etc. Some of the parts are large and heavy, some are very small. Some of the jobs can be done rather roughly, requiring little more than that the piece be smooth to touch; others require that the parts fit together to very close tolerances and that they must be free from nicks and scratches.

Despite these differences, the jobs are very similar in that the worker must find the burr, usually by touch, and must remove it either by machine which sands, grinds, or otherwise smooths it off, or by hand operation utilizing one or more of the following: a sharp knife, file, drill, reamer, scraper, sandpaper, emory cloth, or wire brushes. Some workers also wash the parts, using a special detergent solution. Others perform at least a rough inspection during their work on each piece, and one performs a flaring operation which enlarges ends so the pieces can fit together. Some work on the same piece day after day, while others may work on dozens of different kinds of parts within a single day. None report special safety devices related to their blindness, but in many cases safety goggles are worn by all workers on deburring assignments.

Employer: Manufacturers of metal parts.

Hours: Usually a 40 hour week. May work on various shifts around the clock.

Assistance—Supervision: Occasionally burrs are inside parts where they cannot be reached by touch, as in a hole which has been drilled through the part; in such cases, that particular deburring will be done by another worker. Records of work completed are often kept by a seeing fellow worker. Several of these people worked in spots which the company regarded as hazardous; therefore, the company insisted that they move about only with guides. None indicated any unusual supervision.

Equipment, Adaptations, Records: More than half used some type of machine for the deburring operation; all used some hand tools as listed above. Record keeping was limited to filling out work tickets or similar records related to piecework compensation.

Travel: To and from the job only. As noted above, several were required by the employer to move on the job only with a guide since the work space was regarded as hazardous.

Vision: Totally blind people are successful in this work.

Education and Training: Sixth to eighth grade was most characteristic; however, several were high school graduates and one was a college graduate. There is no evidence of academic qualifications required for the work. Most received on-the-job training, felt proficient within a few weeks.

Compensation: Most were paid between \$2.00 and \$2.75 an hour.

Bearing Ring Assembler 706.884, *Hydraulic Press Operator* 617.280
(3, M, ages 26-51, totally blind and light perception only)

Job Description: In the making of sleeve bearings, a series of operations is required. One worker, on a night shift, has learned all these operations and varies in his assignment because the night shift is small, and men must do whatever is needed that night. He describes these operations as follows:

When the sleeve bearings come into his room, the first operation is to put the bearing on a form which spreads the balls and makes them equidistant. Next, the retainer which holds the balls in place is put in, and this is placed on a machine which puts rivets in between the balls and the retainer and holds these together. The third operation is another press which rivets the retainer and balls tightly. Fourth, there is a washing machine with four spindles which sprays the dirt out. Fifth, the bearing is held against a fixture on a greaser, and with pressure on a pedal, grease shoots into the bearings. Also, in this operation, the bearings are put on a spindle and tested for noise and roughness inside. Then the bearing goes to a sealing machine which attaches an outside seal, and finally to a spinner. The initial components are trucked into the room, but the completed bearings leave on an assembly line, going through a window where a set screw is put in place, and finally they are packed.

The workers say this job does not require much dexterity. A setup man makes all adjustments on the machines so the worker does little more than turn machines on and off, but he does have to know where the dies are in the machines. He comments that the machines are complicated to set up, but not complicated to run, and it is easy to learn where the bearing fits into each die. He does not use vision at all on this job.

Another worker sits at a bench where he assembles the components of chrome plated bearings. He puts rollers and a cone into the cage, and puts this combination through a press which closes them in. He must check each one to be sure it is neither too tight nor too loose, and correct any which are not just right. This is more nearly a manual job and does require speed and dexterity.

Employers: Manufacturers of bearings.

Hours: A 48 hour week, sometimes 10 or 11 hours a night.

Assistance—Supervision: In starting a job, the worker may ask the supervisor to pick out the right size of bearing for him.

Equipment, Adaptations, Records: Standard equipment is used without adaptation. Production records are kept.

Travel: To and from the place of employment only.

Vision: Totally blind workers are successful in this job.

Education and Training: A year of high school is adequate; most training is on the job, although one of these men did have some special pre-vocational training.

Compensation: Roughly \$2.50 an hour.

Assembler—Production 706.887 (22, MF, ages 22-53, 9 totally blind or light perception only, 6 with object perception or travel vision, 7 able to do some reading.)

Job Description: A great many people earn a living by putting things together—all kinds of things. Sometimes they do it entirely by hand, sometimes they use hand tools such as screwdrivers and wrenches, and sometimes they use some form of simple power tool. Some work only on one combination of parts, day after day; others work on a great variety of parts. Some do only a single operation in the assembly of an item, while others may carry through several operations to do the entire assembly of that item. Certain industries have relatively well-known assembly tasks and these will be described in another section, with identification of the industries.

In this section we are grouping a rather large number of people who have little in common except that they all do some form of assembly work. We shall merely describe a few examples; many other items, in almost every industry, use the skills of the assembler and might be considered as possible employment for people with visual problems.

One girl works for a manufacturer of bow ties. After the tie has been made, she attaches a clip (to go over the collar button) on the back, and inserts the tie into a little machine which adds a strip of tape back of the clip. This is a piece work operation and is regarded

as entirely a hand assembly, since her little tape machine is hand operated. She has to be able to distinguish colors so she does not mix the ties, but she rarely needs help with this—only when a number of dark colors come through together, or ties with very small figures on them. The amount she produces is accounted for by taking a ticket off the box (which contains 6 dozen ties) and at the end of the day she attaches all her tickets to the time sheet, so no records need be kept.

Another person assembles trophies; that is, he attaches little metal figures of golfers, bowlers, etc., to marble or plastic bases. He has to use a drill to make a hole in the marble, then inserts a rod in the figure and attaches it with a screw to the base. He therefore uses drills, screwdrivers, and occasionally wrenches and cutters. This is not a piecework job.

A man uses a manually operated machine to round clamps, that is, to bend and form wire into a circle with an eye on one end and a nut on the other. A girl makes a small plastic flashlight by fastening one piece into a jig which holds it firm, assembling three other parts, covering the edge with cement and then attaching the cemented edge to the part in the jig; she is able to make five of these in a minute.

One man works for a company which makes drag lines and excavating machines. His work is very varied. Sometimes he dips parts in rust preventive, at other times he rivets brake bands and linings together, at other times he puts crates and cartons together. In the course of his work he may use electric drills, wrenches, hammers, chisels, and a riveting machine. He can see large objects and works for an employer who chooses for him the jobs he can do.

A girl working for a dental equipment company sometimes puts small pieces on wire to be plated, sometimes runs them through the plating solutions, sometimes sands rough places, sometimes glues parts together. She uses screwdrivers, pliers, and a machine to cut wire. She, also, can see objects but says that most of her work is done by touch.

A man working for a pump company does a series of complex assemblies. He assembles conduit wires, fastens switches to them, assembles junction boxes, sometimes assembles switches. He works not only with many hand tools but also uses an impact wrench run by air. A worker in another pump company assembles the entire pump—in fact, 25 different types of pumps. Although each pump has different parts, some brass, some stainless steel, some iron, and many different sizes of bolts, he has learned to assemble all of them without requiring any adaptations of tools. A worker for a farm equipment manufacturer does seven different assemblies: four gears and three valves. In making a gear, he places the base on a jig and rotates it with his left hand as he feeds needle bearings in with his right hand. When he feels that he has gotten in as many bearings as possible, he tries to

insert a screwdriver and if he can get it in, he works it backs and forth to make space, loads that space with bearings, then tries his screwdriver again.

In a plant which makes equipment parts for the government, one man assembles filters. One of these filters, for example, is about 9 inches in diameter. He starts with a "skeleton" which has been prepared by another worker, and which consists of a spindle in the middle of 12 individual rods around a circle. On each of the 12 rods, he puts washers and discs, the washers making the space for material to filter through. These parts vary in thickness from 8/1000 inch to 31/1000 inch in thickness, and as many as 12 washers may go between discs. In the whole assembly there are 7000 washers and 600 discs, and they must be assembled with complete accuracy or they will not work correctly. It takes about five hours to make one of these.

Employers: Some type of assembly work is found in almost every manufacturing organization.

Hours: Usually a regular work week, occasionally with overtime.

Assistance—Supervision: Except for some help in distinguishing colors, reading work tickets and recording production, these workers are quite independent. Occasionally supervisors assist with these.

Equipment, Adaptations, Records: Most of these workers use simple hand tools, especially screwdrivers, wrenches, jigs to hold their work, cutting tools and drills. In some cases no tools at all are used. Some use simple power equipment, electric drills, riveting machines, an air driven impact wrench, etc. Adaptations in tools are remarkably few, consisting only of a couple people who use special markings to show how far to put things together or where to stop a turning movement. All keep some form of production record, sometimes merely by taking a ticket from each batch. Adjustments lie chiefly in substituting touch for sight.

Travel: None of these jobs requires on-the-job mobility. Typically, work is brought to the worker, not only the blind worker but all workers of this type.

Vision: Except for a couple of jobs where it is important to distinguish color, there is little evidence that vision is used on these jobs, even by those who have enough to read.

Education and Training: Ten of these people were high school graduates and one had a year of college; the others varied in education to as few as six years of schooling. There is little evidence that formal education is important to this work.

Compensation: Varies from \$45 to \$120 per week.

Job Description: One young man who got a job in the X-ray darkroom of a hospital took advantage of a hobby related to electrical work to move into the instrument repair field. Although not all of his repair work involves electrical apparatus, it was his familiarity with such equipment, and his aptitude for learning mechanical things which won him the job.

Now he repairs such hospital equipment as the cuffs which are wound around the patient's arm in order to take blood pressure, stethoscopes, and other scopes which are used by physicians to look into the eyes, ears, etc. Sometimes he repairs oxygen tents, isolettes, incubators, a number of types of suction machines. Occasionally, he repairs heating pads or electric blankets. More recently he has been given the added assignment of setting up motion picture projectors, tape recorders, and the public address system in various classrooms and the auditorium of the hospital. He has to take this equipment to the room where it is needed, set it up, and make sure it is functioning properly before the meeting when it will be used.

He has his own shop, a fairly large room in the center of the hospital. The aids and orderlies bring the damaged items to him, and pick them up again when he has them in good working order. He does have to keep a record of everything repaired, and has to write out orders for parts he needs. This is a job where mechanical aptitude and the quality of the job outweigh speed, although, of course, he cannot delay too much in getting work done since the equipment is needed by the hospital.

Employers: A large hospital.

Hours: 40 hours per week.

Assistance—Supervision: Occasionally needs assistance when working with a small and delicate instrument where there might, for example, be a relay with several contacts and points are very close. Says men from the maintenance crew would help with this. Little direct supervision.

Equipment, Adaptations, Records: Uses the standard tools of an electrician. Has a small lightbulb hooked in series with alligator clamps to check the continuity of a line; he can feel the heat from it, and does not have to see it. Must keep a record of requisitions filled (work completed).

Travel: In view of setting up motion picture and recording equipment, must be mobile throughout hospital.

Vision: Requires enough vision to check functioning of motion picture equipment.

Education and Training: Only eight grades of formal education, but had had on-the-job training in several industrial jobs before coming to the hospital, and had picked up a great deal of electrical knowledge as a hobby.

Compensation: \$63.20 per week.

Meter Repairman 710.231 (3, M, ages 28-65, vision varies from light perception to limited reading)

Job Description: In a world where we pay for many things by the amount measured on a meter, the meter repairman performs the important task of keeping these measuring instruments working accurately. Our interviewees worked on water meters and parking meters, but similar work might be done on many other kinds of meters.

When a meter is found to be defective, it is brought into the shop and here the meter repairman takes it apart. Often, as many as seventy-five parts are involved, even including a clock mechanism, and these parts must be carefully placed in small trays, then dipped into a cleaning solution. The repairman then determines which parts are worn and need replacement. He may polish some parts with steel wool or make other repairs. Then the whole meter must be reassembled, tested for accurate performance, and put back into use.

Since the parts are often very small, excellent tactual discrimination and dexterity are important. The repairman must be something of a detective in order to find all the worn parts, and must take a pride in the accuracy of his work. Adjustment and readjustment may be necessary before this complex little mechanism will work well, but it is a challenge to the mechanically minded. Ability to intercept sound cues may be important.

Employers: City water and traffic departments.

Hours: Two worked a 40 hour week; one was a part-time worker.

Assistance—Supervision: One worker indicated that he sometimes asked a sighted fellow worker or the supervisor to look at a meter he could not get to work correctly; the supervisor also kept the records of parts used for this man.

Equipment, Adaptations, Records: A variety of small tools are used such as tweezers, spin type sockets, screwdrivers, wrenches, pliers. One worker had made a small tool to help him set the registers straight and another had devised a tool to locate parts where he could not get his fingers into the space. No records were kept by any of these men, but as noted above, one supervisor did keep a record of parts used by the worker.

Travel: One worker, at times, accompanied a sighted fellow worker to do repairs in the field.

Vision: It appears quite possible to do this work without useful vision.

Education and Training: These men varied from ninth to twelfth grade in education. Two had some specific preparation for this work in training centers, the third learned on the job. They comment that at first it was difficult to learn to put parts into their proper places, but in about six months all were proficient.

Compensation: Varies from \$1.50 to \$2.70 per hour.

Radio and Television Repairmen 720.281 (6, M, ages 32 to 48, one is totally blind; all the others can do some reading of print)

Job Description: Radio and television are so much a part of our culture that we are all very aware that many things can go wrong with them. Some of these troubles are easily found and repaired, as with the replacement of a tube, while others defy location and give the repairman challenging problems.

One interviewee works for a Civil Defense agency, repairing and building special equipment used to maintain civil defense coordination for governmental agencies during emergency conditions. Some of this is quite unusual equipment and this department plans and develops it to fit the needs. Very little of the equipment is standard or purchased from outside sources. This is work in which problem solving, inventiveness and originality are essential. Considerable knowledge of theory is necessary. The dependability of the equipment is also very important since many lives might hang upon its functioning when needed, even though it is not constantly in use; therefore every job must be done with great accuracy and care.

The other five men work for repair shops and they may do their work in the shop or in the home of the customer. They may work on car radios, as well as those used in the home. Their first step is to try to find out what is wrong, by noting how the set works or by use of instruments and testing equipment. Some of them also repair tape recorders and public address systems. One man specialized in closed circuit television work.

These jobs require high levels of skill, knowledge of electronics supplemented by some originality, persistence, and ingenuity in solving problems. Manual dexterity is of considerable importance since much of this equipment is small, work must be done within small areas, and relatively delicate tools are used. Since it may be necessary to assist in picking up or delivering television sets and similar equipment, some physical strength is needed although this is the smallest part of the job. Some ability to meet the public, to set prices, and keep records may also be required.

Employers: Civil Defense agency and various radio and television repair shops, and self-employed.

Hours: 40 to 60 hours per week, the longer hours being characteristic of the self-employed.

Assistance—Supervision: One man who is color blind may have to ask what color a part is, when the color is used as a code. Several of these men own their shops and employ assistants to whom they may assign some of the visually more demanding tasks. Records are frequently left to someone else, an employee, or family member, although all these men make some temporary records as they work through the day.

Equipment, Adaptations, Records: Standard tools of this trade are used without adaptations, soldering irons, wire cutters, drills, pliers, screw drivers, meters of various kinds. One man uses a magnifying glass lighted by a fluorescent ring around the edge in order to work with small printed circuitry, find cracks or breaks, or do other very fine work. Some record of work done, materials used, time spent, etc. is necessary to all these jobs. The totally blind man kept all his records in braille when he started his business but now that his business has grown, he hires a bookkeeper.

Travel: Most of these people must do some work outside their shops and good travel skills are important.

Vision: Although a totally blind person is successful in this work, the fact that all but one of these men have reading vision seems significant.

Education and Training: Formal education varies from 11th grade to the equivalent of college. All have had about two years of training in electronics and some continue to take correspondence courses. Specialized training is definitely necessary to this work.

Compensation: Income varies from \$2,000 to \$15,000 yearly.

Telephone Repairman 722.281 (4, M, ages 27-39, three totally blind, one with travel vision)

Job Description: The modern telephone is a very complex and expensive piece of equipment. When a handset needs repair, it is usually sent to a center where it is completely dismantled. The repairman removes two screws to loosen a cap at the receiver end, another two screws and cap at the transmitter end, and takes out all the parts. The cord is also pulled out. The two caps are then replaced, and the handset is put in a big washing machine containing a heavy soap solution and boiling water. During this process, the phone is scalded, rinsed and dried, making it completely clean and sanitary. Then the handsets, about fifty at a time, are put into a huge tumble barrel containing maple pegs full of dye and wax. This barrel, by turning for about an hour, tumbles phones and pegs together until a new coating of dye

and wax has both beautified and protected the phones. Upon removal from this barrel, the phones may be rubbed with cheesecloth to remove excess wax and inspected. Meanwhile, all the inner components are checked and cleaned by other workers, and worn parts are replaced. Finally, the handset is fully reassembled, with a new cord.

One of our interviewees also repairs the Heller Stapler which his company uses to fasten inside telephone wire to baseboards and around doors. It shoots a little brass staple around the wire to hold it in place on the wall. The stapler contains about thirty-five parts which may wear or crack. He tears them down completely, cleans and replaces parts as necessary, and re-assembles them.

These workers emphasize that this is a production job requiring quickness and lightness of touch, good tactual discrimination, good memory, and some ability to use small tools. It is important to maintain a neat and orderly work space, to keep parts in their proper bins, and to use exactly the same method every time. However, it requires little or no theoretical knowledge. Only two of these men had to handle wires as separate components, and they stated that making the necessary connections was simple.

Employers: Western Electric and one other telephone company.

Hours: 40-hour week.

Assistance—Supervision: In one case, the employee's production record is kept by a stock boy. Supervision seems rather close and constant, but this appears to have nothing to do with the visual limitations since it is characteristic of the whole department.

Equipment, Adaptations, Records: Screwdrivers, wrenches, cutter pliers, wire puller. The man who repairs the stapler uses a clamp vise, file and hacksaw. No adaptations or unusual use except for constant use of touch. In one case, records of production are maintained by another worker. In another case, a list of materials to be ordered is kept with the aid of a writing guide. One worker makes the count for his production record by simply counting the trays of finished work at the end of the day, since each tray contains a certain number of units.

Travel: To and from the place of employment only.

Vision: Totally blind workers are successful in this job.

Education and Training: Education of these men varied from tenth to twelfth grade. Formal education seems to play a limited part in job success. All had on-the-job training.

Compensation: Roughly \$100 a week.

Electrical Appliance Repairman 723.381 (5, M, ages 25-51, all can do some reading of ink print)

Job Description: When the refrigerator gets hot instead of cold, when the washer refuses to wash, or the rotisserie refuses to turn—call the appliance repairman! In today's homes, where much of the work is done by appliances, the repairman is very important to keeping everything running smoothly.

Some of these workers repair any appliance, and it is impossible to detail here all the steps they might take to accomplish these very varied tasks. They may work on appliances sent in to department stores or back to the maker for repair, on appliances which are traded in on new ones (and which will be resold as used equipment), or on appliances which have broken down within the warranty period. One man actually runs a "swap-shop" along with his repair shop; that is, he buys used appliances, repairs and refinishes them, and sells them.

One man, working for a company which makes appliances, repairs chiefly rotisseries. Usually they have been returned because of defective heat controls, in which case he has to install new thermostats. However, if something is wrong with the motor, he has to take it apart, find and correct the trouble, and re-assemble it.

Another man is a *motor winder*, only, but works on many kinds of motors, all somewhat different so that there is plenty of variety and challenge to his job. A complete rebuilding of the wiring part of the motor is required, since all that he works on are burned out. He sets up the winding machine with the proper types of wires for each motor, takes care of the insulation and complete re-assembly of the motor.

Employers: Appliance manufacturers, department stores, repair shops, self-employed in own shop.

Hours: Usually 40 to 45 hours per week. However, self-employed person may be called on for emergency work at any time.

Assistance—Supervision: Assistance is required only with very fine wiring, or record-keeping. Several of these people work very closely with their supervisors so that they appear to have almost constant supervision, but probably not because of their vision. The man with the "swap-shop" has his son help him at times.

Equipment, Adaptations, Records: Standard tools of this trade, including screwdrivers, pliers, socket wrenches, drills, sanders, various testing equipment, grinder, rivet machine, winding machine, solderer, buffer. All keep some records of time and materials required, using conventional means.

Travel: Several of these men, working for repair shops or departments in stores, must be able to travel to homes to make repairs. Good travel

skills are important for these persons. The others need travel only to and from the place of employment.

Vision: All of these persons have sufficient vision to travel well and to keep simple records in written form as well as using vision to do the repair work itself.

Education and Training: One has tenth grade, three are high school graduates, and one is a graduate of a technical school at the college level. All have had at least one year of relevant trade school training, and 18 months of such training seems preferred.

Compensation: \$50 to \$85 a week.

Assembler, Production 706.887, Assembler, Line 723.884 (9, MF, ages 32-63, eight totally blind or light perception, one able to do limited reading)

Job Description: Among this group of assemblers we are describing examples of jobs of moderate complexity, yet still production jobs in the sense that the worker is expected to produce a large number of items each day.

One of the most unusual of these is the *horn tuner*. He sits at his work table and has, in front of him, a fixture to hold each horn as he works on it. Back of this fixture is a large, deep box into which the sound of the horn goes; the box does not absorb all the sound, but it cuts the blast down so that it is not so noisy around the shop. The completed horns are brought to him on a skid and placed on his work table. He takes them, one at a time, places them in the fixture of the tuning box, and tightens the screws until the horn starts to blow. Then he adjusts them until he has the right tone. He pushes air pedals to make high or low pressure, and tuning is done entirely by sound; that is, he listens for the right tone, pitch and blending of sound. When he thinks he has it right, he always does a final test with high air pressure to make sure they hold under maximum conditions. When he has trouble with a horn, he puts it aside, as a reject, to be repaired later when he has time. Occasionally he helps to build the horns, and may do all types of assembly work around the shop, including the use of drill presses and automatic taps. Ordinarily, however, he uses only hand tools.

Another worker assembles *antennas*, the nine-foot type used for two-way communication systems. His work is quite varied. Sometimes he puts holes into the aluminum tubing so that tubes can be put together and made longer; then bolts go through these holes. At other times he winds wire, assembles other parts, drills holes, puts base fittings on the antennas or balls on the smaller end. He may use a power wrench, drills and many hand tools.

Still another job involves *making component parts of speakers* which go into many different radio and television sets. This involves

work on speakers which range from 3½ inches to 12 or 15 inches in diameter. The worker puts together various metal parts and fits them into a housing before they go on the assembly line. For example, she may put together two rings, a magnet, a cup and the housing, must place these on a fixture in her machine, then pull two handles on the machine to fasten the parts together. Sometimes she works on as many as three different machines in a day, so versatility is required. In addition, speed and a deft, light touch are essential since the parts are small, and even the fixture is delicate and rather easily broken. If her work is not correct, the defects show up on the assembly line, so every assembly is, as it were, automatically inspected and tested. She must use both hands equally well and in perfect coordination.

A man assembles *doors for heavy duty stoves* used in restaurants. He picks up a frame, puts a bolt into it to hold the lining in place, and puts insulation into the frame right on top of the lining. He puts a name plate on the panel, and fits the panel on the frame. Then he uses a power screwdriver to fasten these elements with twelve self-tapping screws around the sides of the door frame. Then he reams, or sometimes files, two holes for the pins on which the door will swing, places pins in the holes, and adds two bolts with lock washers on them. Finally, he fastens a handle to the door by bolting the two posts, either by hand or power wrench according to the type of door on which he is working. Finally, he places the door on a skid to be taken away.

Another interesting job is the making of *screens over which coal runs to drain* off water picked up when it is washed. This is a wedge-shaped piece made from rods and wired together. The rods come in twelve-foot lengths and must first be cut into small bars of the correct lengths. The cut ends must be deburred with the grinder, and one end must be given a "head" by use of the rivet gun. The bars must be drilled, laid in the correct pattern, and fastened into position. It is interesting to note that, after working on this product for a while, this worker redesigned it, and his new design was accepted and is now in use.

A final example is the assembly of *wheels for vacuum cleaners*. The worker starts with an axle or shaft which he places into a horizontal jig in order to hold it in place while he works on it. Then, using both hands, he assembles two wheels at the same time, washers, wheels, lock rings and spindles. An automatic press forces the parts into position and fastens them. Finally, the completed part is removed from the jig, and the next assembly is begun.

Employers: Various manufacturing organizations.

Hours: 40 to 45 hours per week.

Assistance—Supervision: None of those workers report any need for assistance except in filling out time and production cards and, in

several cases, in travel about the plant which is considered hazardous. Several indicate that when they started on their jobs, they felt they were watched very closely, supervised with extra care. Once they were familiar with the work, no extra supervision was given.

Equipment, Adaptations, Records: Most of these workers use only standard equipment without adaptation. The man who makes screens for coal has a notched measuring stick, set up for the different lengths of rods he needs. The horn tuner's boss checks his air gauges each morning to be sure he has the right pressure for tuning. Another worker states that he is simply not asked to do any of the fine work which might require unusual tactual discriminations. All must turn in time and work records which are kept for them by seeing fellow workers.

Travel: To and from the place of employment only.

Vision: Totally blind workers are successful in these jobs.

Education and Training: Six of these people are high school graduates, while the others vary in education down to sixth grade level. There is little evidence of academic requirements for any of these jobs.

Compensation: \$57 to \$116 per week.

Assembler—Light Fixtures 723.884 (2, M, ages 58-60, totally blind or light perception only.

Job Description: In the making of lighting fixtures, especially for commercial or industrial use, a number of parts must be assembled. The work of the two men described here is only illustrative.

One man assembles sockets and puts the socket on a socket holder. He sits at a table, to which his work has been brought in bins, and puts the socket into a housing. To fasten it, he uses an air-powered screwdriver at about 2000 RPM. The driver is in a little half-inch guide which slips over the screw. He then touches a lever and the driver finishes the job. Occasionally, if something goes wrong, he has to use a hand screwdriver to back the screw out since his power tool does not have a reverse on it. He is not supposed to use cracked sockets and at times he must ask a seeing worker to check a socket for defects.

The other worker makes a V-Reflector for indirect lighting. This is not assembly line work but requires shaping metal over a jig, using a crimping tool which slides down over a section of the baffle which has been cut, and a screwdriver. He works at a table which holds his jig. His work is automatically checked as it goes through the next process, which is painting.

Employers: Manufacturers of industrial lighting.

Hours: Standard work week.

Assistance—Supervision: May require assistance in checking supposedly defective parts. No unusual supervision.

Equipment, Adaptations, Records: Both men use standard equipment without adaptation. No records.

Travel: To and from the place of employment only.

Vision: A totally blind worker is successful in this job.

Education and Training: Both have some high school training but work is based chiefly on training on the job.

Compensation: Roughly \$1.80 an hour.

Insulator 724.887 (1, M, 33, limited reading)

Job Description: That important element of any electric motor, the armature, is formed by winding wire around a core. However, it is necessary to have insulation—in this case, paper—between.

This worker is in a department which makes small motors and the armature on which he works is on a shaft only six inches long. He sits in front of a machine which does the actual insertion of the insulating paper. As he picks up each armature, he slips a fiber sleeve over the ends of the shaft, then he quickly positions it on the machine, aligning the master slot of the core with a projection from the machine. The machine automatically inserts either 12 or 14 papers into slots in the core as it turns the core. The worker then removes the core and places it in a chute or in a box to go to the girls who wind the wire, the armature winders. It is important for him to keep up with the winder or he will delay her production. Occasionally he has trouble with his machine; it may crumple the paper or fail to fill one of the slots. When this occurs the winder returns the piece to him for correction so every piece is inspected as it goes through the next process.

At times, when work for his machine is not available, he may straighten wires on stators before they are dipped. He may also help to clean the work area.

Employer: Manufacturer of small electric motors.

Hours: 40 hour week.

Assistance—Supervision: The armature winder returns any incorrect pieces which may be regarded as assistance, since she sees what is wrong when he does not. He keeps track of his production and at the end of the work period the department leader writes it on his time card.

Equipment, Adaptations, Records: Uses insulating machine which has a clutch so that he can stop it immediately if something goes wrong;

however, this is on all machines, not an adaptation for him. Must keep production record which is written on time card by forelady.

Travel: To and from the place of employment only.

Vision: Although he has some useful vision, it is not clear that he uses it on the job.

Education and Training: Completed 8th Grade and had two years of trade school training to be an auto mechanic. He says this is of no assistance in his present work which he learned by on-the-job training.

Compensation: \$1.38 an hour plus piecework bonus.

Assemblers, Electronics or Electrical 726.781, 723.884, 827.884 (13, MF, ages 27-52, three totally blind, ten with vision varying from object perception to reading)

Job Description: The workers described in this group do partial assemblies for electric or electronic products. In general, they differ from workers in some of the other assembly groups in the extent to which they work with wires. We admit that this is a somewhat arbitrary division since many of the assembly activities are very like the activities of people who work on other materials. Also, it is important to point out that manufacture of electrical equipment includes many parts other than wires; the fact that a person works for a manufacturer of electrical products does not necessarily mean that he works with wiring.

One man performs part of the operations necessary to make relays or electrical contact sets which are mounted on magnetic coils which are operated remotely to transfer high voltage through various equipment such as electrical machines, power equipment, emergency systems, outside electric lighting which requires heavy voltage, etc. Moveable silver and gold contacts are mounted on a bakelite which is known as a finger block, and the contacts are usually referred to as fingers. When the electrical coil is energized, it pulls the frame down against the stationary contacts, and it completes the circuit, transferring the electricity.

In mounting these, he must first secure a small plate to the bakelite finger block. Then he inserts a stud to hold the bakelite to the plate and to the moveable contact; placed on this is a small spring which is secured between cup washers. Then the whole combination is secured with a cotter pin. The jumping wire is then fastened on with small pigtail screws. This is mounted on a horseshoe-shaped bracket which, in turn, is mounted on the armature of the metal coil. This usually completed his part of the operation; however, occasionally he makes up the complete units, mounting the stationary coils. He has adapted a screwdriver to make his operation more efficient

and has also developed a special method in mounting on pigtails so that he can pick up the screws, the flat washer, the pigtail, all at once, drop them on and tighten them, eliminating one operation.

A *coil assembler* picks up, from separate trucks, two types of wire, clips them together, dips them in a varnish solution which is heated and sticky, and then puts them under four heat lamps to bake them. She must wear gloves to lift the hot wires out, and place them in a vise to straighten and cool them. At times, she also does *reinforcing*, in which she wraps teflon, mica and a mica mat around wires. This is entirely hand work, but because of the delicacy of touch and accuracy required, it is rated as a higher level job. Both of these are piecework jobs.

Another worker performs one operation on *inserts for a condenser*. After the inserts are made—quite delicate parts of silver and foil—they come to her on a folder with a wax sheet. Sometimes she must straighten the foil and make sure they are exactly in position on the folder. Then she puts a white sheet over the section, and, using a paint brush, she dabs the sheet with a 20% solution of silicone. The point of this whole process is to cover these delicate parts with the silicone solution. Occasionally, she also makes up the folders, mentioned above, on which the inserts rest. Although she must work quickly, a light touch is required. The work is sedentary and exacting.

A relatively simple job is the *assembly of a tube shield*, the part which covers a tube in a radio or television set. The part is made up of the metal shield and a spring which guards the tube against a shock or bump. The worker picks up a shield, turns it so the open end is up, and fits the wider end of the spring (which he has picked up with the other hand) into it and pushes it down with his finger. Then he turns the shield over, onto a post on his work bench, and bangs it down with his hand to force the spring firmly in place. He makes these in great quantity—literally by the barrel. The parts are brought to him, and the finished assemblies removed by the floor boy so that this, too, is a completely sedentary job—and quite boring!

A young woman assists in the *assembly of do-it-yourself kits* for making radios. The order card for a particular day's work tells her which kinds of wire, and how much of each kind, should go into the kits to be made that day. She measures each piece of wire, cuts it from the large spool, winds it up, and wraps it with a rubber band. She cannot read the order card, but she can distinguish the colors which identify the different kinds of wire; this amount of vision is essential to the job.

The *cable harnesser* for a company which makes oscilloscopes must also use rather complex color coding. Cables are made on boards on which there are nails, in a pattern, and each nail is colored

or striped to show where the wires must go. Since this worker cannot see colors, he uses braille to make up a notebook showing the pattern of each of the cables; this tells him which cord goes to which nail, and he can refer to the book to check his work. He has memorized the patterns for familiar cables, but when a new one comes along, he borrows the board and running sheet from the plant, takes them home, and his wife helps him work up the notebook.

Employers: Manufacturers of electrical and electronic equipment.

Hours: Standard work week.

Assistance—Supervision: A number of these workers must have someone read the order cards for the day's work. The cable harnesser sometimes uses the assistance of his wife to develop a brailled description of a new cable pattern; he also comments that when he starts working on a new cable, the supervisor always stays nearby for the first two or three to help if he gets into difficulty. Several other workers comment that the supervisor watches them carefully on new tasks and may assist in the learning of such tasks. A worker who has to measure rather long wires accurately states that his boss drove a nail every foot down the work bench so he could measure independently. Several of these workers report that their time cards and piecework records are filled out for them by fellow workers.

Equipment, Adaptations, Records: Most of these workers use standard equipment without adaptations. One man greatly improved his efficiency with a screwdriver operation by improvising a shield around his driver (made out of a file handle) and this enabled him to drop the whole thing over the screw, twist until he locates the slot, and turn without slipping off. He has also devised ways to eliminate steps in standard operations, and thus improve his production. A man with partial vision has a circular light bulb with a magnifying lense in it so that he can see his work. In order to be able to fill out his own time card, one man had a little fixture made to fit over the card; in this way he can find the space to fill in his serial number, production, etc. One worker uses a braille micrometer.

Travel: To and from the place of employment only.

Vision: Several of these workers must have enough vision to distinguish colors, although another who would seem to need such vision has devised ways to manage without it, memorizing patterns or using a braille notebook to tell him what to do.

Education and Training: Although people with only eighth, ninth, or tenth grade education are included in this group, most of these workers are high school graduates and several have some vocational school training.

Compensation: Although the hourly rates on these jobs go as low as \$1.46 per hour, most are piecework jobs, many are rated at around \$2.00 an hour, and a weekly pay of \$125 is not unusual.

Harness Fabricator or Cable Maker (Aircraft) 726.884 (1, M, 35, limited reading with magnifier)

Job Description: The harness is the wiring system, from plug to plug, and is part of the total electrical system of the aircraft. Ten or twelve wires of a certain length may be needed for one particular application; these are prepared and bundled by the harness fabricator.

In general, his work involves cutting wires to specified lengths, putting terminals on them, fastening them together in bundles, and stamping them with identification numbers. These numbers tell where the wire is supposed to be used which, without the numbers, might be difficult to determine once they got separated from the bundle. The worker may spend a whole day doing just one operation—such as stamping 5,000 feet of wire or putting on terminals—but on most days his work is varied. For example, he may twist a number of wires into a cable; perhaps six wires twenty feet long would be twisted together. He may also use a hydraulic crimper to mount the terminals on the ends of the wires. His fingers tell him how far the wire is coming out of the terminal and where to crimp it.

Employer: Electrical circuit division of Air Force base.

Hours: 40 hours per week.

Assistance—Supervision: Although he can do a little reading with his magnifier, it is sometimes more efficient to get someone to read the work orders to him; he then marks them down in braille, so that as he moves down the list of the day's work, he knows just what to do. Since he has been in this job for 15 years, he receives little direct supervision.

Equipment, Adaptations, Records: Uses hydraulic crimper, automatic stamping machine, semi-automatic wire cutter. He of course uses slate and stylus for writing braille which he uses for orders; also, he sometimes keeps certain records in braille for his own future use to make the job more efficient. None of his equipment is specially adapted for him but he works entirely by touch.

Travel: To and from place of employment only.

Vision: Can do a little reading with magnifier. Uses this chiefly to read and adjust the number on the stamping machine. If he could not see this, would need someone to adjust it for him.

Education and Training: Only 10th grade education. Chief training is on the job and he feels he learned the job within a few days.

Compensation: \$6,300 a year.

Stacker (Lamination) and Burner (Batteries) 729.884 (2, M, ages 19-23, can read ink print)

Job Description: As is well known to anyone whose car has refused to start on a winter morning, the automotive battery is essential to the running of cars, trucks and buses. The inside of a battery is a complex pile of positive and negative plates which are prevented from touching each other by thin separators.

Our interviewees assembled these plates and separators. The plates are brought to the work space in stacks of about fifty each. The worker gets his own separators from the supply nearby; since the separators are very thin, there are about seventy-five of them in each stack. The stacks of positive and negative plates are placed to the left of each work space, the separators to the right. In the middle of the work space is a block designed to hold the assembly together until it is completed.

The worker rapidly picks up and places on the block first a negative plate (left hand), then a separator (right hand), then a positive plate (left hand), then a separator (right hand), then again a negative plate, a separator, a positive plate . . . until he has the right number for the particular type of battery upon which he is working. One cell of a battery may have from thirteen to twenty-seven plates, depending on size and power wanted. He works so fast that his hands seem to fly, assembling an average of three cells in two minutes; yet he must handle the separators with great care since they are thin and brittle and chip easily.

The assembled plates and separators are passed to a fellow worker who puts them under a burning machine. The assembler must have the parts lined up very straight because there are lugs on these parts, and the lugs must be in line so that the burning machine can burn posts on them. Following this burning operation, the cells are put in cases to which compounds, connectors and lids will be added before the cell is complete.

Success in this job requires a light, sure touch, great speed and dexterity, and great accuracy in lining up the parts. Our interviewees did not use the burning machine, but might, at times, assist the fellow worker to adjust it; in doing this, they might use screwdrivers or hand wrenches. Every three months, they also assist in taking inventory. At the end of each shift, the worker fills out his own production report.

Employer: Battery manufacturer.

Hours: 40-hour week.

Assistance—Supervision: Requires no assistance or special supervision.
Works as part of a two-man team.

Equipment, Adaptations, Records: Except for occasionally helping to adjust the burning machine, at which times screwdrivers and wrenches might be used, the only equipment is the block on which parts are assembled. Production record is kept in pencil once a day.

Travel: To and from the place of employment only.

Vision: Both workers have useful vision; it is not clear whether this would be necessary to the job success.

Education and Training: Both workers finished eighth grade in a general course. There is no evidence that formal education is important. On-the-job training is necessary, but brief. The chief problem is learning to work with necessary speed (must keep ahead of the man running the burning machine) without chipping any parts.

Compensation: \$1.65 an hour plus bonus for production.

Piano Technician 730.281 (11, M, ages 26-45, vision varies from totally blind to limited reading)

Job Description: The piano technician differs from the tuner chiefly in the fact that he may spend a considerable part of his time in repairs to the piano, not merely in tuning. These people, therefore, work on used pianos, not in factories where the new pianos would not require repair. In many cases, they are self-employed, and consequently they run a small business in which their own skills form the saleable item. They may, however, be employed on a part-time or full-time basis by piano stores or tuning services, and one man owns such a business in which he buys used pianos, rebuilds them and sells them.

The tuning itself is done very much as described in the job description for piano tuner. The demand for accuracy and exactness may be somewhat greater than it is for the tuner in a factory, and the time required for the job is consequently greater, but the process is the same.

The technician may also do the complete repair and rebuilding of a piano, at times even including refinishing its exterior. Most of these men limited themselves to work on the "action" of the piano, including repair of broken hammer shanks, regluing of jacks, replacement of felts, replacement of strings, resurfacing of hammers which may become grooved from striking the strings, etc.

The first step in repair is to determine just what is wrong. The technician takes it apart and examines it, plays it to see how it sounds, and checks the pitch to see how flat it is. If parts are broken, he determines what will have to be done to repair or replace them. Then he is able to give the customer a statement of the cost of repair. Since there are about 5000 parts in a piano, this evaluation is, in itself, a fairly complex process.

The repair may involve obtaining or making new parts, replacing them in the piano, gluing, screwing, cleaning. At times, power tools must be used, such as drills and sanders; but for work in homes, hand tools are more frequently used. Keys may be refinished with plastic. A record must be kept of work done, files of customers must be maintained, and some technicians have a system for reminding regular customers when six months have passed, and the piano should be re-tuned. An inventory of parts must be kept, at least informally, and new parts must be ordered from time to time. Thus, in some degree, all the records of a business are required. It is also necessary to have someone to answer the phone, and this is usually the tuner's wife. However, many tuners also require a driver and here, again, the wife may help.

Employers: Piano retailers or services, or self-employed.

Hours: Often irregular and dependent upon demand.

Assistance—Supervision: The major assistance is in record-keeping and billing, usually done by the tuner's wife, or in driving which may be done by the wife, a friend or a part-time employee. The man who runs his own store must have colors identified for him. Supervision is chiefly the satisfaction of the customers.

Equipment, Adaptations, Records: In addition to the standard equipment of the tuner, technicians may use screwdrivers, drills, sanders, saws, buffers, stringing equipment, cleaning equipment. Adaptations are rare. One man reports having devised a bent wire to replace strings, something for which a sighted worker might use pliers. Others report the use of a brailled ruler and pressure lock pliers available from the American Foundation for the Blind.

Travel: Although many of these men have drivers, considerable independence of travel and excellent mobility in strange places are required.

Vision: Totally blind persons are successful in this work.

Education and Training: All are high school graduates, and three are college graduates. Many appear to have had a good bit of training in music.

Compensation: Varies from \$1,200 to \$12,000 annually.

Piano Tuner 730.381 (10, M, ages 18-72, seven totally blind or light perception only, two with object perception, one able to read)

Job Description: In the course of their manufacture, sale and placement in the home of the buyer, pianos may be tuned a number of times.

The first tuning, of course, takes place at the factory. Here the

tuner works in a small booth, which is soundproof. Usually the initial tuning is done before the front and "furniture" parts have been placed on the instrument. Just the sides, keyboard and functional parts of the piano are there. The piano is on a kind of cart, on casters, so that it can easily be moved, not only for the purpose of bringing it to the tuner, but also so that he can readily move it and get around it.

We will not, here, attempt to detail the art of piano tuning. There are differences, among tuners, on individual procedures, but in general the tuner uses a felt or rubber strip to mute the strings during the tuning, removing this when he has finished. He may also place wedges to separate strings. With a tuning fork, he sets Middle C, then goes through the temperament until he has every key in the middle section. From this octave he tunes the rest of the piano.

One interviewee described a procedure—frequently used, he states—by which one hand is kept on the tuning hammer at all times, and one hand on the keyboard. In this procedure, if you move the hammer, you move your index finger; you can jump from one set of fingers to another and keep your hand on the keyboard. He states that a person using this method can tune a piano from five to ten minutes faster than one who uses the two-hand method. Another interviewee comments that he uses a stick where others tend to use a rubber wedge; he finds that with the stick, it is easier to move hammer and wedge with one hand than it is with rubber.

These are production jobs; the object is to see how many pianos one man can tune in an hour. In some places, despite separate booths, working conditions are noisy, but interviewees assure us that one gets used to that, and it does not affect the quality of the job done.

Other tuning is done when the piano reaches the retail store, where it must again be put into top tune so that it can be demonstrated to customers. A final tuning is given to the new piano after it is delivered to the home of the buyer. Some of these interviewees functioned in the latter two tuning assignments which may require more exactness and are expected to take more time.

Employers: Piano manufacturers and sales organizations.

Hours: Usually 40 hours per week. Some of these men also do tuning, on a private basis, in their own time.

Assistance—Supervision: None of these men report assistance in the regular routines of their jobs.

Equipment, Adaptations, Records: With minor personal variations, these men use the standard tools of the tuner: felt or rubber strip and other wedges or mutes, the tuning fork, the tuning hammer. Fac-

tories vary somewhat in the way records are kept of work done; usually the tuner tears off some part of an identification ticket which forms his record of the pianos upon which he has worked.

Travel: Most of these men travel only to and from the place of employment. The need for tuning in the home of the purchaser of a piano is rare for this group.

Vision: Totally blind persons are successful in this work.

Education and Training: Most of these men are graduates of schools for the blind and learned their basic tuning skills there. Two also have some college training which does not appear to be used in this work. One, educated in public schools, was taught tuning privately as an adult.

Compensation: \$1.35 to \$2.90 per hour.

Ribbon Winder 733.887 (1, F, 50, can do limited reading)

Job Description: The inked ribbon on that neat little spool you put on your typewriter was once on a huge reel. The worker who transfers it to the small spools sits in front of a machine. Back of her are the large reels of ribbon, of different widths and weights and material. These large reels are brought to her by a stockboy. When she receives an order, it tells her which reel of ribbon to use, and how much is to go on each of the spools she winds, and, of course, how many spools are to be wound for that order.

She selects the proper reel of ribbon, and places it on her machine. She also sets the yardage indicator according to the ribbon length specified. Then she draws the end of the ribbon around rollers and through a guide which she has adjusted according to the width of the ribbon. With a small knife, she tucks the ribbon into the empty spool which she places on a spindle. By depressing a pedal, the right amount of ribbon is automatically wound onto the spool. Then she cuts the ribbon, and finishes it on an eyelet and hook machine, also pedal operated; this last operation facilitates attaching the ribbon on the typewriter. A fastener is attached to prevent the ribbon from unwinding, and she puts the completed spool in a pan. When the pan is filled, she marks it with the original work order, and it is taken away.

The unused part of the large reel must be ticketed, too, and returned to the area back of the machine. She uses up 12 or 13 of these large reels in a typical working day. To do this work, it is necessary to be fast with your hands, and because one is constantly working with inked ribbons, this is a very dirty job.

Employer: Typewriter supply house.

Hours: 40 hours per week.

Assistance—Supervision: If the number on the large reel is smudged, she may have to ask someone else to read it for her. She feels that all workers in this job are closely supervised.

Equipment, Adaptations, Records: Uses a winding machine and a hook and eyelet machine without adaptation. Must ticket her reels.

Travel: To and from the place of employment only.

Vision: She feels that it is necessary to be able to read the work orders and the reel numbers.

Education and Training: Completed 11th grade, but there is no evidence that this education is necessary to the job. On-the-job training resulted in proficiency within a few months.

Compensation: \$70 per week.

Picture Frame Machine Operator 739.884 (1, M, 32, light perception)

Job Description: In the mass manufacture of picture frames of standard sizes, the last operation is the assembly, within the frame, of glass, a mat, and cardboard backing. These must then be held in place by a few small nails or clips.

Our interviewee uses an automatic nailer or clipping machine (some frames get nails and some clips) to place these. Frames of different sizes, thicknesses and made from different materials must all be treated just a little differently. Therefore, each time he changes from one frame to another, he must reset his machine to make the clips or nails lie flat so that they do not injure the hands of the customer. Then he positions each frame in the machine, nails or clips are shot into place, and he removes the frame and passes it on to a wrapper. His particular machine uses larger and heavier clips and he works only on the larger frames. Occasionally, the sighted person who assembles the frames will leave out the mat; he has learned to recognize this by touch, and must return these to the sighted operator to have the mat put in. Sometimes the cardboard backing, which is on top of the assembly, will drop on the floor; he has learned to distinguish the face and back of the cardboard tactually, so he can return it with the correct side out.

Sometimes his machine will bend a clip while putting it in. When he feels this, he must flip the bent clip out, find exactly that spot by touch (the cardboard has been slightly indented by the first clip) and put a new clip in that spot. To some extent, he is responsible for the girl who does his wrapping; if he finds that she is doing anything incorrectly, he must correct her. In turn, she or another worker will warn him if a truck load of glass happens to have been left in the middle of the aisle!

Speed and dexterity are important in this work. Our interviewee averages 1800 to 2000 finished frames a day. He says that when he started on this job, he got a lot of work back because he had not learned to check his work tactually and correct his own errors. However, he has now been on this job for some years and can determine, by touch, whether the job is well done.

Employer: Picture frame manufacturer.

Hours: Standard work week.

Assistance—Supervision: Requires no assistance, but is grateful if warned about obstacles which may be left in the aisle. Far from requiring much supervision, he assists in supervising his wrapper.

Equipment, Adaptations, Records: Uses standard machine to place nails or clips. No adaptations. No records.

Travel: To and from the place of employment only.

Vision: A person without useful vision is successful in this work.

Education and Training: High school graduate, but skills necessary for this work were acquired on the job. Believes he was proficient in about six weeks.

Compensation: \$80 per week.

Appliance Refinisher 741.884 (1, M, 58, travel vision)

Job Description: Redecorating your kitchen? Of course you want your appliances to match the new color scheme. But the finish on refrigerators, freezers, washers and driers, is not ordinary paint so you send them out to be refinished to a hard, bright surface, just like new.

The interviewee got his start in this business by refinishing kitchen equipment for dealers in used appliances. He says that these bright, new-looking pieces on the dealer's showroom floor were his best advertisement. Now he is kept so busy with this kind of work that he often spends twelve hours a day on the job.

First, he studies each piece carefully and plans just what must be done and how best to do it. Then he uses a solvent to dissolve grease and wax, then a strong detergent and electric sander to remove what the solvents have left. Sanding is always the final step in preparing the surface. He removes or masks with tape all sections which are not to be painted, such as the trim. Then he primes it, resands it and gives it two topcoats of new color.

He has a spray room and uses all spray equipment for painting. Infra-red panels enable him to dry in two hours what would ordinarily require at least twenty-four hours. He must keep his floors

oiled to keep the dust down, must maintain adequate supplies by keeping a rough inventory and reordering at the proper times. He must, of course, also keep records of work completed, of income, and of the costs of running his business.

Employer: Self-employed.

Hours: May work as much as twelve hours a day during very busy periods.

Assistance—Supervision: No assistance. Work is checked by the satisfaction of the customers.

Equipment, Adaptations, Records: Uses ordinary hand tools, electric sander and spray equipment. No special adaptations. Keeps business records by conventional means.

Travel: To and from his shop only.

Vision: Has peripheral vision; is uncertain whether it would be possible to do this work entirely without vision.

Education and Training: High school and trade school. Had done painting in a large maintenance department for more than four years before loss of vision.

Compensation: Profit well over \$1,000 last year.

Case or Flat Repairer 760.884 (2, M, ages 33-58, vision varies from totally blind to limited reading vision)

Job Description: The wooden flats, cases, or crates in which such products as soft drinks are shipped often receive pretty rough usage. Too often they loosen, or one or two slats break, yet on the whole the case is still quite usable. At such times they are sent to the repairman.

His job starts with determining just what is the matter with each case and deciding how best to replace broken parts, either from lumber which he must cut to fit or from broken parts, which have already been prepared. He then removes the damaged parts, fits in the new ones, and nails the whole case firmly together again. It is also his responsibility to decide when the case is not worth repairing. He may also load the cases on trucks and take them to other parts of the building. This work is similar to that done in many organizations where wooden packing cases are used.

Employers: Makers or distributors of soft drinks.

Hours: 45 to 47 hours per week.

Assistance—Supervision: No assistance is required and there is no evidence that any unusual supervision is required.

Equipment, Adaptations, Records: Simple tools such as nipper, hammer and hatchet, hand saw, screwdrivers, grips for pulling out nails; may use banding machine if cases are held together by bands. No records.

Travel: A small amount of in-plant travel, but chiefly to and from the place of employment.

Vision: A totally blind person is successful in this work.

Education and Training: Academic background seems to be less important than ability to work effectively with simple tools. On-the-job training results in efficiency within 6 weeks.

Compensation: \$1.00 to \$1.20 per hour.

Chair caner, Rug Weaver, Leather Goods Maker, Doormat Maker 763.884 (2, M, ages 32-50, one totally blind, one with object perception)

Job Description: These jobs do not represent full-time or competitive employment, although it may be possible that with a person of special talents, or in a special and very favorable location, they might represent business enterprises.

One of these men does only the manufacture of doormats which he makes to order from the standard strips of old tires. In making his strips, he cuts the tire round and round using a disc cutter. On this, he is able to set a gauge for the width of the cut he wants. In making the mat, he places one strip toward him and one away from him, and by putting spacers of tubing in between, he can make a diamond-shape pattern. He has developed a small market for his mats among hardware and chain stores.

The second man alternates his time among chair caning, rug weaving and occasional making of leather products. He performs all of these tasks in the classic ways taught in schools for the blind, and it seems unnecessary to go into detail concerning these operations here.

Employers: Self-employed.

Hours: Determined by amount of demand for the products.

Assistance—Supervision: No assistance or supervision.

Equipment, Adaptations, Records: Use standard equipment without special adaptation. Some small record-keeping necessary to business.

Travel: May travel in making sales. Work is done in home.

Vision: A totally blind person can do these tasks.

Education and Training: One had three, the other eleven, years of education.

Compensation: Not stated.

Furniture Assembler 763.884 (2, M, ages 25-56, both can do limited reading of ink print)

Job Description: In the process of making furniture, many machine and assembly operations might be done without vision. These never represent the complete making of a piece of furniture, but are production jobs in furniture factories.

One worker fits base plates on the bottoms of hassocks. He works at a table on which he has a pile of plates ready for use. He places the hassock, upside-down, on his table, and fits four plates on the bottom, fastening each one with a single screw to "base it down." Then, he takes a handful of screws in one hand, controls his pneumatic screwdriver in the other, and drives screws all the way around the bottom to hold the plates firmly. The screwdriver makes this an easy and quick assignment, for it provides 100 pounds of pressure and has a speed of 2,400 RPM. When the worker needs new supplies, he has only to ask for them, and they are brought from the supply area by a small lift truck. Since he knows how many plates come in a box, he has only to keep track of the number of boxes used in order to know his production for a day.

Another worker performs a variety of operations in a plant which specializes in making table slides, but his chief assignment is boring holes for screws. To do this, he uses three sets of automatic drills, each of which can drill six sets a minute. The table slides are used by various companies which make furniture and each company uses different sizes of screws to fasten them, so our interviewee must be careful to bore the right size of hole, depending on the work order. In doing this, he is part of a rather complex assembly line operation so that his work must be done both accurately and fast.

Both of these jobs require quick and accurate hands and considerable energy to meet the daily production requirements. No real trade knowledge is required, however, and the work is quickly learned. The screwdriver operator says the key to success lies in a steady hand; it is not necessary to use much pressure.

Employers: Manufacturers of furniture or parts for furniture.

Hours: 40 to 50 hours per week.

Assistance—Supervision: Neither man requires assistance or unusual supervision.

Equipment, Adaptations, Records: Standard equipment is used without adaptation. Records are only for the employee's benefit, to satisfy his curiosity about his production.

Travel: To and from the place of employment only.

Vision: Both men have some useful vision, although it is not evident how necessary this is to the job.

Education and Training: Both workers have less than high school education. On-the-job training appears to be the most important preparation.

Compensation: Roughly \$1.40 per hour.

Wedge Maker (Mining) (Woodworking Shop Hand) 769.887 (1, M, 49, totally blind)

Job Description: A former miner, who lost his vision in a mine accident, is now in business for himself, making wooden wedges which are used in large numbers in mines.

He obtains 2 x 4's or scrap lumber roughly 2 inches thick and four inches wide. He cuts this into pieces which are one foot in length. Then he stands these pieces on their sides and splits them into wedge shapes. Finally, he drills a hole through the middle of each one and puts them on wire, 25 to a bundle. In these operations he uses power saws and a power drill and often he must use files. He has to inspect each piece at least roughly, since he must discard pieces which have knots in them, or cracks or bad edges.

Since he then sells these wedges to mines and is paid only for what he sells, this is a kind of piecework. He says that in eight hours he can make 62 bundles, with 25 wedges in each bundle. Anyone considering this kind of business must, of course, consider where he can sell the wedges; it may be possible to contract with mines to supply all their needs but since the number of customers is somewhat limited, such pre-arrangements would be important. Also, since this is essentially a small business, all the records necessary to a business must be kept.

Employer: Self-employed.

Hours: Usually works about 40 hours per week.

Assistance—Supervision: Has no supervision except in the sense that his work must be acceptable to the customer. His wife assists in keeping records and at times helps him put wedges on the wire—merely to increase production, not because he cannot do it.

Equipment, Adaptations, Records: Uses power saw and drill and wire-cutting equipment, hand files. Has planned his work space so that he can use these efficiently and safely. Business records must be kept.

Travel: Works in home.

Vision: Totally blind.

Education and Training: Completed 8th grade. It is not clear whether this education is important to the work but some mechanical ability is necessary, some ability to use tools. Also, the planning and management of a small business might be expected to require basic education.

Compensation: Makes about \$60 a week.

Foreman

Upholstery

Fabricating

780.137, 809.130 (4, M, ages, 31-60, all with at least good travel vision)

Job Description: Every group activity needs someone to train, direct, lead, evaluate and supervise so that the group will be a team, effectively pulling toward a common goal. In industry, this person is usually called a foreman.

Although the operations performed by the group varied greatly—upholstery, machine shop work, assembly, packaging, etc.—all of these men were responsible for getting out production, good in terms of both quantity and quality. Some were working foremen, using the machines and performing the job operations along with those whom they supervised. All were responsible for training new workers, and showing new jobs to all workers. All were responsible for assigning work to individuals under their direction both to take the greatest advantage of each individual's skills, and to get each product out on time. All had some responsibility for the ordering of needed parts and the maintaining of supplies and finished products in an orderly fashion. All were able to operate most, if not all, the machines in their departments. All were able to determine quality of work done by their subordinates, and functioned to some extent as inspectors. All were able to set up machines, make minor repairs and adjustments. All were responsible for some records. All had some responsibility for employee relations.

These jobs require maturity, judgment and a willingness to take responsibility. The foreman must be able to foresee needs, and many of his activities are designed to prevent problems rather than to solve them. It is desirable if he can devise better and quicker ways to get the work done, even to the point of inventing little aids and shortcuts for his subordinates. He may not be required to work rapidly himself, but he must constantly be aware of getting production out, and he must be the kind of leader who makes other people want to do their best. Because of the responsibility for tools and equipment, mechanical aptitude, as well as public relations skills, can be useful.

Employers: Various manufacturing companies and one contract shop.

Hours: Regular work week.

Assistance—Supervision: The need for assistance in reading is reported by all. Although these men are, themselves, supervisors, all report to superiors. Especially close supervision is not reported.

Equipment, Adaptations, Records: All use the equipment of their departments with little adaptation. Record-keeping is usually delegated.

Travel: Excellent mobility throughout the work area is required.

Vision: All have at least travel vision, and the ability to check the activities of other workers is certainly essential whether the check is done visually or otherwise.

Education and Training: Two have eighth grade education, one tenth grade and one is a high school graduate. None seems to depend largely on formal education on the job.

Compensation: \$64 to \$110 per week.

Upholsterer 780.884 (9, M, ages 21-59, five totally blind or light perception, four have object perception or better)

Job Description: The man with well developed skills in the upholsterer's trade has a variety of job opportunities open to him. He may work for a manufacturer, perhaps specializing in some small part of the total product, perhaps moving from one assignment to another as he is needed; he may work on furniture or on some product that we might not think of as furniture, but which requires padding; he may do entirely rebuilding and repair work or work only on new articles; he may even have his own business and, when sufficiently successful, have others working for him.

Most of us are probably familiar with the upholsterer who repairs and refinishes the old furniture and covers it with new material. The customer may tell him just how much of a repair job is wanted, but usually it is the upholsterer's responsibility to determine how completely he must rebuild the furniture in order to have a good job. Therefore, the first demonstration of his skill lies in evaluating by touch in just what condition the piece is, and predicting how much work will be required to put it in good shape. He must also have samples of material from which the customer can choose the one in which the furniture is to be re-covered.

The furniture must be gotten to the upholsterer's shop: if he is in business for himself, he must work out a way to manage this; one man has his own pickup truck and hires helpers, one of whom can drive the truck.

The actual work begins with tearing the furniture down, perhaps all the way to the frame. Sometimes even the old finish is stripped

off, the frame is glued, sanded, perhaps tightened with screws or dowels. Then the wood must be refinished, a process involving putting on several layers of finish, with the use of sandpaper, steel wool, etc., before each new layer is applied. Usually, however, the upholsterer is not responsible for refinishing the wood, but merely for gluing and tightening the frame.

Then the body of the furniture must be put into good order, possibly replacing spring coils, retying them, replacing webbing, padding and burlap. Although the customer never sees this part of the job, he will know from the firmness, smoothness and comfort of the piece whether the work has been well done.

Then the upholsterer must decide how much material is needed to cover the furniture and how to cut it most advantageously. Some of our interviewees do their own sewing, others have help, either from employees or from family members. Some feel sure they have placed the covering material straight; others used sighted help for this too. Then the covering material is fastened in place, often with staples, and the final trim, if any, may be applied.

In addition to this general and basic upholstery work, some of our interviewees were specialists.

One man, in a factory, makes only seats, yet his procedures do not materially differ from what we described above. He fits the spring coils into the crossed wires to form the foundation of the whole construction. Sometimes he does only this, allowing other workers to complete the seat; at other times, he carries through the entire process of padding, covering, etc. When he started on this job, he used a hammer and tacks to fasten his materials, but now he uses a compressed air stapler. He says that when he picks up a handful of coil springs, he automatically counts them by running his thumb down them, so he knows he has the right number.

Another man, working for a manufacturer of dinettes, does nothing but prepare the bases for the backs of chairs. His is really the first step on an assembly line. He tacks cardboard into place, hands it to the next man who fastens cotton to it, and sends it on to the next worker who stuffs it.

Even more unusual is the work of a man who makes headrests for jeep-creepers. In case you did not know, the jeep-creeper is the flat board, on four rollers, used chiefly by mechanics to work under automobiles. These boards must have headrests which are covered with plastic or leather—anything that resists dirt since they are likely to be used where grease and dirt are present. This man has devised a cutting board for the leather cover, so he can cut the right size and shape quickly and economically. He has also devised a mold into which he lays the leather, then he can firmly fill the mold with cotton to get the right amount and shape for the headrest. Then he tacks the cover and padding onto a board which someone else will later

screw to the board of the jeeper-creeper. This man has worked out an arrangement with the employer so that he does the work in a converted garage space in his own home, but it is possible that he was able to do this only because the manufacturer is right at the end of the street where he lives!

Employers: Manufacturers of furniture and related equipment or self-employed.

Hours: 40 to 50 hours per week, except that self-employed persons may work on a part-time basis.

Assistance—Supervision: Assistance may be required where colors or matching are involved, to get materials straight, in picking up and delivering furniture, and in record-keeping and billing. For self-employed persons, supervision comes only from the satisfaction or lack of satisfaction of the customer.

Equipment, Adaptations, Records: These workers usually use the standard equipment of the trade, including the sewing machine, machine for making coils, staple gun, mallets, tack hammers, chisel, cutting board, molds for padding. Those employed in factories have little record-keeping to do. Those in business for themselves must order, maintain inventory, record costs, bill, etc.

Travel: At most, to and from the place of employment; some work in their homes.

Vision: Totally blind persons are successful in this work.

Education and Training: Education in this group varied from no formal education whatever to high school graduation. Most had some trade training.

Compensation: Varied from \$125 per month to \$125 per week (average).

Hemmer (Sewing Machine Operator) 786.782 (1, F, 45, totally blind)

Job Description: One of the last steps in the manufacture of a shirt or a blouse is putting in the bottom hem. The machine used to perform this operation turns the hem, does the stitching, and trims the threads off. It is an electric sewing machine, operated by foot pressure.

The operator sits at the machine. A tray of work is brought to her and placed on her right. She picks up the shirts by the collar, follows down one side from the corner of the collar, until she has the bottom ready to position under the pressure of the sewing machine. The rest is pretty much automatic, the machine responding to the pressure of her foot, and her hands being free to keep the material straight. As each shirt is completed, she places it into the tray

on her left, and when the bundle of shirts has been sewn, another worker takes them away.

Employer: Shirt and blouse manufacturer.

Hours: 40 hours per week.

Assistance—Supervision: The supervisor keeps the production record because the worker cannot read the lot numbers. This worker feels that she calls upon her supervisor more than the seeing workers do, not only to keep the production record, but in case she thinks she has made a mistake. All work is checked by inspectors.

Equipment, Adaptations, Records: Uses the pressing-hemming machine without special devices. Production record is kept for her by supervisor.

Travel: To and from the place of employment only. Is not allowed to travel alone in the plant, by the wish of management.

Vision: Totally blind workers are successful on this job.

Education and Training: Has eighth grade education, but does this work on the basis of on-the-job training.

Compensation: \$1.25 per hour.

Glove Shaper 789.887 (2, M, aged 28-43, both with travel vision)

Job Description: The workers described here are employed by a plant making safety equipment, and the gloves upon which they work are lined with heavy protective material; however, it is possible that similar jobs may be found with other glove manufacturers.

When gloves are made, they are, of course, sewn inside out. The gloves must then be turned and shaped. The latter operation requires the operator to pick up the gloves, one at a time, and run each of the fingers and the thumb over an eighteen-inch rod, rather like a broomstick. This is a shaped form which completes the turning and pushes out the finger tips. Then he lays the glove on the work table, and gets all the wrinkles out between the fingers and in the palm, and also gets the seams smooth—a kind of pounding operation. During this process, the operator also inspects the gloves, and if he finds anything incorrectly done, returns them to be done correctly. Those assigned to these operations work more or less as a team, and each individual worker must maintain production speed.

This work is done in a standing position and in a rather small and confined area. Work is brought to the work table and dumped there for the team which works around that table. Speed and dexterity are important to the job. Among the disadvantages are the fact that one must stand all day and the relative monotony of the job.

On the other hand, if the particular work team is congenial, time seems to pass rather quickly.

Employer: Safety clothing and equipment manufacturer.

Hours: 40 hours per week.

Assistance—Supervision: No assistance. Supervision involves little more than assigning a particular type of work for the day. All gloves are automatically inspected by girls who clip threads, etc.

Equipment, Adaptations, Records: The only equipment used are the shaping bar and wooden paddle. No adaptations. No records.

Travel: To and from place of employment only.

Vision: Both workers have travel vision, but it is not clear that this is necessary to the job.

Education and Training: One completed eighth grade, the other high school. The essential training, however, is that given on the job.

Compensation; \$1.25 per hour.

Box Maker, Paperboard 794.884 (7, M, ages 26-50, three totally blind or light perception only, two with travel vision, two able to do limited reading)

Job Description: Many of the things we buy are delivered to us in boxes made of some type of paperboard or cardboard. Large or small, designed for heavy objects or for light and delicate ones, cartons meant only to protect or colorful packages meant also to attract customers—boxes have great variety. Our interviewees made boxes for objects as different as shoes and television sets, auto parts and cocktail snacks, flowers and bacon! Almost any manufacturing or merchandising organization might have a job making boxes.

Different as the boxes are in size, shape and toughness, the process of making them is rather similar. All the boxes start as flat, pre-cut pieces of some weight and type of paperboard. The worker always (among those to whom we talked) has to make a number of sizes of boxes or cartons, and he stacks the flat, pre-cut pieces neatly in some order suited to his needs. All of these interviewees emphasized the importance of order in the work place, so that they can immediately find the size and kind of box they want to make, since they switch rather frequently from one size to another.

When they come in each day, they themselves check, or are told by the supervisor, what kind of box is most needed by the packers who use the boxes. So they start making that kind of box. But the packers will soon run low on supplies of another size of box, and the supervisor will let the boxmaker know that he should switch to

the needed item. And so they switch from box to box frequently during a day, always trying to keep ahead of the needs of the packing line.

They pick up a bundle of the flat pieces of the size they want, and, one by one, they shape the flat pieces into boxes, then staple them or tape them together. Sometimes the boxes have lids which the boxmaker also shapes and puts on each box. Then he piles the boxes on skids or otherwise places them for the use of the packing line. Many boxes must have linings or inserts placed in them. The lining may be paper or polyethylene, may be pre-cut or may be cut from the roll by the boxmaker. The boxes for flowers may have an insert which rises in a V-shape and across which the flower stems lay; the lid also has such an insert, and when the lid is closed over the flowers, the two V-shapes meet and keep the flowers firmly in place while they are sent to the customer.

Usually the boxmaker is responsible for ordering his supplies, as he runs low on any size, and these are brought to him from the storeroom. He is also likely to be responsible for keeping any machines he uses oiled and in good condition, but, of course, he is not expected to make major repairs. He may be responsible for keeping his work area neat and clean. He may also do a kind of inspection, discarding any damaged materials. Sometimes he works as part of a team in order to get out faster production; that is, one person folds the boxes, and another staples or tapes them. Occasionally, if caught up on all the boxes that will be needed by his shift, he may work on the packing line.

Employers: Various manufacturing and processing plants and paper box manufacturers.

Hours: Standard work week.

Assistance—Supervision: None of these people reported help in the actual performance of their jobs. It is possible that the supervisors have to tell the blind worker when to switch to another size of box, whereas a seeing person would be able to watch the packing line and know, for himself, what they needed. However, this would obviously depend upon whether the boxmaker works next to the packing line, which is not always true.

Equipment, Adaptations, Records: Staplers, sometimes hand but usually electrically powered and so designed that the box is positioned over the stapler which is operated by a foot pedal. Taping machine which does the taping semi-automatically when the box is placed in it. Shears and cutting tools may be used. No adaptations were reported, but several workers reported tricks by which they recognized different box materials, knew which side was up, etc. No records.

Travel: To and from the place of employment only.

Vision: Totally blind workers are successful on this job.

Compensation: \$1.25 to \$2.25 per hour.

Flower Pot Maker 794.884 (1, M, 55, light perception)

Job Description: Every year—and especially every spring—nurseries need thousands of pots in which to transfer young plants from greenhouses and growing beds to customers. The familiar clay flower pot is both heavy and expensive for this kind of temporary use so that in recent years, many nurseries and florists have turned to the use of pots made from tar paper. One of our interviewees, who was very aware of the need because he himself had been a rose grower, has built a business in his home by manufacturing and selling these tar paper flower pots.

The first step toward manufacture is, of course, buying the tar paper which comes in large rolls and which he purchases in truckload lots. He can place the order for the paper by telephone. After setting a machine with cutting edges to the desired size, he cuts the tar paper into rolls for five sizes of pots. Then he uses a hydraulic machine to shape the pots by pressing them into a form. Next drain holes are cut into the bottoms of the pots, and he staples the sides to fasten them together. Finally, the finished pots are placed in a shipping case which is labeled for size. He feels that touch may be more accurate than sight for some aspects of this work, and therefore feels at no disadvantage.

Since this is a complete business, he must, of course, do some advertising, some selling, and take care of his equipment. Typing of bills, bookkeeping and answering inquiries is done by his wife.

Employer: Self-employed.

Hours: Varies with season, but often in excess of forty hours per week.

Assistance—Supervision: Needs no assistance in the manufacturing process, and has no supervision but knows that his product must be good quality or he will not be able to sell it. Assistance in what might be called the office work of the business is given by his wife.

Equipment, Adaptations, Records: He uses the stapler, roll cutting machine and the hydraulic machine to shape the pots. He has special guards on the latter to protect his hands and states that he brings it down gradually rather than hammering it down. The usual records of a small business must be kept, with his wife's assistance.

Travel: None.

Education and Training: Although this man had three years of college, there is no evidence that this is important to the job. He says he learned by doing and felt proficient in about two months.

Compensation: About \$3.00 per hour.

Riveting Machine Operator 800.732 (3, M, ages 23-43, two totally blind, one with travel vision)

Job Description: The rivet is a small piece of metal which holds parts together. The people who use riveting machines make many different kinds of parts—the only thing they have in common is the fact that rivets hold them together.

One man makes metal hinges for tables. The parts are cut before they come to him; he simply fastens them together. He uses one size rivet to make the hinges, a much longer rivet to fasten the hinges to the table legs. He simply steps on a pedal, after his assembly is in place, and the machine produces the force to do the job.

Another man works, at different times, on seven parts, all of which require riveting. He assembles the parts manually; the machine simply feeds the rivet down a chute and drives it in. Still another worker simply places a post in a fixture, puts a piece of strap iron on it and a little washer on top of that, and pushes a button to rivet them together.

It is characteristic of these machines, whether used by seeing or blind workers, that they are so made that the worker cannot have his hand under the riveting device when it comes down. Either both hands are required to make it come down—such as a button on each side having to be pushed to make it function—or the hands work through attachments which pull them out of the way.

Employers: Various manufacturers where metal parts are involved.

Hours: Standard work week.

Assistance—Supervision: All of these workers function with little assistance, except some help in reading work orders or keeping time and production records. No special supervision appears to be involved.

Equipment, Adaptations, Records: Standard equipment is used without adaptation. All must keep production and time records.

Travel: To and from the place of employment only.

Vision: Totally blind workers are successful in this job.

Education and Training: Education to only the beginning high school level is quite adequate. Training is chiefly on the job.

Compensation: These are piecework jobs with base salary around \$1.50 an hour.

Wire Hanger Maker (Wire Bender) 809.887 (1, M, 30, travel vision)

Job Description: When your clothing is returned by the dry cleaner, it hangs from wire forms—the familiar coat hanger, or clothes hanger. One of our interviewees runs the various machines used to make such hangers.

The wire comes on big coils, weighing about 1500 pounds. This wire is fed into a machine which cuts the proper lengths and these, in turn, go through a machine which shapes the hangers. The proper die must be set into the latter machine in order to get the desired shape. Still another machine paints the hangers, usually a black enamel finish.

All are essentially automatic machines and this worker, with some years of experience, not only can run all of them but does most of the maintenance on them, sees that the dies are put in correctly, has the cutter sharpened, makes adjustments to get greater efficiency. To a large extent he acts as foreman on one shift, therefore he needs not only mechanical ability but some skills in planning, teaching and directing other workers.

Employer: Manufacturer of coat hangers.

Hours: 40 hours per week.

Assistance—Supervision: In making repairs, may ask for assistance in measuring. He supervises others to some extent.

Equipment, Adaptations, Records: Uses cutter, hangermaker, paint machine. Uses many hand tools in set-up, maintenance and adjustment of machines. No special devices. No records.

Travel: To and from the place of employment only, except that he needs good mobility throughout the work area.

Vision: Has travel vision or object perception.

Education and Training: 9th Grade. Learned chiefly on the job.

Compensation: \$1.70 per hour.

Welder, (Spot) 810.782 (2, M, 36-46, vision varies from totally blind to limited reading)

Job Description: Would you like to be part of one of America's greatest, most well-known industries? There are a variety of jobs in the automobile industry which can be handled by the visually handicapped; perhaps one of the most unusual is that of spot welder. Welding of various types is used in many different operations in both body and chassis assembly. This study covered one worker in each of these broad classifications.

These interviewees operate resistance-welding machines that join metal parts by bringing them together under heat and pressure. The operator adjusts the controls of the machine for the desired electric current and pressure, feeds and aligns the work, and removes it after the welding operation is completed. This is considered a semi-skilled operation, usually free from the health hazards which must be considered with hand-welding. The size of the parts to be handled depends on the department the man works in.

Employers: Automobile manufacturers.

Hours: 40 to 45 hours per week. Sometimes there is opportunity for a good deal of overtime work.

Assistance—Supervision: Neither man felt any need for assistance. Both worked under a foreman, but he was not constantly supervising the men in the welding room. There was less supervision than noted on many assembly line jobs.

Equipment, Adaptations, Records: Chief tool is the resistance welding machine. Also some use of riveting machine. Hand files to smooth and adjust electrodes. Occasional use of small presses, hand press, or air gun. No adaptations for visual handicap. One man gets a tally from the machine which automatically records the number of items completed.

Travel: To and from work. One mentions a great deal of in-plant travel.

Vision: A totally blind worker is successful in this job.

Education and Training: Least amount of schooling reported was tenth grade. One reported an excellent course in machine shop training, which helped him on the job. Both received on-the-job training, and produce as much work as sighted men.

Compensation: \$2.87 per hour.

Stripper (Electrical Appliance Serviceman Helper) 827.887 (1, M, age 39, object perception)

Job Description: In many cases, the first step toward the repair of a machine, or similar complex equipment, is to take it completely apart; that is, to "strip" it. All the component parts can then be thoroughly cleaned, tested and inspected, repaired or replaced, and the machine can be reassembled to good working order.

One interviewee does the stripping of electric machines which make change as part of an automatic vending service. For example, in laundromats, and where there is automatic food service, the customer often needs change; he can drop a larger coin into these change-makers, and receive the smaller coins he needs. This change-

maker has eight switches, a motor, wiring, and internal elements; all of which are held in place by numerous screws.

The cabinet of the change-maker is metal, all in one piece except for a plate which shows the manufacturer's trade mark. The first step in stripping is to remove this cover plate by removing the two screws which hold it; plates from all the machines stripped in a day are piled together, and counted at the end of the work period to obtain the production record of each worker. Then, one by one, the switches, wires, motor and other parts are removed, and put into separate bins until the cabinet is bare. Some of the wires must be cut, others are simply pulled free. Most of the parts can be freed by removing the screws which hold them. Because some of the wires must be separated in terms of color, this worker does not completely strip the machine, but leaves part to be done by a seeing fellow worker.

Success in this work requires good manual dexterity, an ability to use tools, especially several types of screwdrivers, good tactual recognition of parts. The parts tend to be greasy, but this seems to be the only disadvantage of the job.

Employer: Vending machine company.

Hours: 40-hour week.

Assistance—Supervision: This man is rather new on the job, and works closely with a more experienced fellow worker who directs him and actually completes the job. It is not clear whether this will continue to be true when the worker has had more experience.

Equipment, Adaptations, Records: Use hand tools without adaptation, such as screwdrivers, wrenches, pliers. No records except the count of the cover plates at the end of the day. This count is recorded by the fellow worker.

Travel: To and from the place of employment only.

Vision: Has object perception, but appears to work by touch only.

Education and Training: Completed seven grades in school, but the chief preparation is on-the-job training.

Compensation: \$1.25 per hour.

Electrician's Helper 829.887 (3, M, ages 35 to 53, one has travel vision, two can do some reading)

Job Description: Many skilled tradesmen need helpers to do more routine aspects of the job, often to do heavy work, or simply to manage aspects of a job which cannot be managed by one man alone. This

is particularly true of electricians on construction jobs, whether residential, commercial or industrial.

The helper assists in putting in the conduit through which wires will run, in pulling heavy cable, moving heavy electrical equipment, etc. He may do some of the more skilled aspects of the job under supervision, but is not expected to make judgments, calculations, or do planning. One of our interviewees sometimes did repairs on electrical motors, such as rewinding armatures.

Obviously, this work requires strength and energy. Dexterity in fine finger movements is less frequently required, but, if present, it may help the man move on to more skilled work. The major advantage of these jobs is that they may enable the worker to learn some of the electrician's skills; in short, these should be looked upon as entry jobs to the trade. One of our interviewees is currently taking a course in industrial electronics in the hope of advancement.

Employers: Construction companies.

Hours: 40 hours per week.

Assistance—Supervision: The nature of the work means that these men are helping others and are constantly supervised by the person they help. One comments that work assignments are adjusted to his vision in the sense that he is never asked to climb on scaffolding.

Equipment, Adaptations, Records: Use standard hand and power tools, including power threaders, pipe benders, saws, pliers, channel locks, screwdrivers, hammers, etc. No records required.

Travel: Considerable mobility on the job is necessary.

Vision: At least travel vision, good ability to discern objects, is necessary.

Education and Training: One has only ninth grade, one has four years of trade school and is still taking further training, and the third has graduated from high school.

Compensation: Receive union wages.

Painter's Helper 345.884 (2, M, ages 30-50, able to do limited reading of ink print)

Job Description: Although a finished job of fine painting is not only visually pleasing, but, as a job, is visually demanding, much of a skilled painter's time can be saved if he has a good helper. This is true in painting buildings but, especially, it applies to painting trucks and automobiles.

The painter's helper may do most of the sanding which prepares the surface for the new paint. Rusted spots must be sanded smooth,

and even the primer coat may be sanded before the finish coat is applied. One interviewee commented that, even for people with good vision, touch may be a more accurate indicator of when the sanding job has been well done, so lack of vision is no great handicap on this task. However, some skill is required; for example, if an automobile is to be painted the same color it formerly was, it is sanded in one way, but if it is to be painted a different color, one must sand the opposite way.

Another way to help the painter is to cover all the areas which are not to be painted. The windshield, for example, is covered with paper which is taped down at the edges. All the chrome on the car must also be covered with masking tape. Some parts are completely removed while the new paint is applied. All this the helper can do. He may also spray on the primer coat; since this will be sanded down, it need not be done with perfect smoothness.

This is a job in which teamwork counts. The painter and his helper must produce a perfect finished job, each doing what he can do best.

Employers: Contractor and auto body shop.

Hours: 40 hours per week.

Assistance—Supervision: Occasionally assistance and supervision combine in the sense that the painter will find the spots left undone by the helper and may either do them himself or direct the helper to complete them. Generally speaking, it is not so much a matter of assistance as a matter of so dividing the work within the painter-helper team that the helper performs all the parts of the task that he can while the painter takes responsibility for parts of the job which require good vision.

Equipment, Adaptations, Records: Electric wire brush, vibrator, sander, paint spraying equipment, paint brushes. No adaptations. No records.

Travel: To and from the job chiefly, but good mobility in the paint shop is necessary.

Vision: Both interviewees had some useful vision.

Education and Training: Formal education does not appear a necessary qualification for this job.

Compensation: Roughly \$1.35 an hour.

Miner Helper (Laborer) 850.887 (1, M, 41, can do limited reading)

Job Description: A man with a good bit of experience working in coal mines, returned after partial loss of vision to act as a miner's helper.

Usually he started his work day by helping to get timbers ready for use in the mine. He loaded them by hand onto a mine "buggy" which is a small four-wheeled vehicle, powered by electricity, which runs in and out of the mine on a track. The buggy would then carry the timbers down into the mine where he would help to unload the timbers, ready for the day's use.

Most of his working day, however, was spent loading buckets of coal onto the buggy, down in the mine. When the buggy was loaded, he would push it onto the track and from there it would move by electricity up to the mouth of the mine where someone else removed the coal. When the buggy was returned to the spot where he was working, he would take it off the track, re-load it, and start that process over again. He had to keep a record of the number of buggies he loaded each day.

This is a heavy, strenuous job which requires work chiefly underground and in cramped quarters. At times, this worker felt he could not work at proper speed because the amount of air available in the mine was not adequate. It is also often necessary to work in a stooped position.

Employer: Coal mine.

Hours: Six hours a day.

Assistance—Supervision: No direct assistance, but most of his work was done as part of a team. No unusual supervision necessary.

Equipment, Adaptations, Records: Used standard equipment without adaptation. Did have to keep a record of the number of buggies loaded and this he did with pegs.

Travel: Must be able to travel in mine. Comments that he sometimes had difficulty seeing fellow workers, but otherwise seems to have had no travel difficulties.

Vision: It is not clear whether he could have managed this job without his partial vision.

Education and Training: Completed high school, but this does not seem to have been used in his work.

Compensation: \$70.00 weekly.

Laborer, Road & Construction 850.887, 914.887 (5, M, ages 26-49, one with light perception, two with travel vision, and two able to read ink print)

Job Description: Although they receive little individual credit, and rarely know the reward of public expressions of gratitude, every city and county owes a debt to the men who keep the roads in repair, the

sewers in functioning order, the ditches cleared so that water does not overflow, and the service equipment in good working order.

These men are the laborers, the construction and repair gangs. When holes develop in a street or road, the supervisor sends out a truck with asphalt and men who blast this asphalt into the holes and tap it down until it is firm and smooth. At other times, they fill in uneven places with gravel, or dig ditches so that water will drain along the roads instead of flooding basements. If there is a flood warning, they stuff bags with sand, tie them, and pile them at the floodgate to stop the water.

One man has charge of the gasoline pump where city trucks and cars get their fuel; he must keep a record of the amount of fuel pumped into each truck, the number of that truck and the job on which it is working. He keeps these records in braille. He must also re-order gasoline when the pump gets low. Between such activities, he maintains the flares used to mark road repairs; the carbon has to be scraped off them, the wick turned up, and they must be filled with kerosene. He uses a nozzle with a hand pump to put the kerosene into them. At times, he does other types of cleaning.

Another man loads and unloads trucks, stacks lumber, and otherwise assists in a supply yard. Although he can see only large objects, he says he compensates for this by constantly being aware of and remembering what other people would see. Still another man cares for the grounds around four small sewage pumping stations, mowing the grass and doing "pick and shovel" work.

These jobs require physical strength and energy more than speed and deftness. They are outdoor jobs, in all kinds of weather, but for many people this is one of their desirable qualities.

Employers: City and county maintenance departments.

Hours: 40 to 42 hours per week.

Assistance—Supervision: No direct assistance in most cases, but their assignments may be chosen in terms of vision. The man responsible for the gasoline pump must record the amount of gasoline pumped, number of truck and job to which that truck is assigned. He does this in braille and each evening his daughter transcribes this onto the required forms. Supervision is rather close on most of these jobs, but not, apparently, because of vision.

Equipment, Adaptations, Records: Use standard tools. The man responsible for the gasoline pump has been given a strong light directly over the pump so he can read its register. Has also been given a horn so that when truckers pull up for gasoline, they can blow this in case he is at some distance. For records, see above.

Travel: Good mobility is important on all these jobs.

Vision: The men who work on the road, need at least good object perception, and good travel vision.

Education and Training: Eighth grade to high school graduate. Little evidence that most of these workers require formal education, and they state that training is brief and on-the-job.

Compensation: \$1.90 to \$2.50 per hour.

Carpenter 860.281 (1, M, 47, totally blind)

Job Description: A large institution, such as a state hospital, usually requires the fulltime services of several carpenters, and at least one of these may be assigned entirely to repairing furniture and making small items such as picture frames. Carefully studying the piece of furniture by touch, the carpenter determines what is wrong with it and decides how it can be repaired—or, indeed, whether it is worth repairing. He then takes the piece apart, makes and fits in the new sections and puts the furniture together again. In this process, he uses standard carpenter's tools and glue to hold the parts in place. Sometimes no standard parts are available, so the new sections must be made with the use of such equipment as the bandsaw, table saw, joiner, electric drill, and dowel machine.

The interviewee was able to use all tools and equipment independently, but occasionally accepted assistance from a fellow worker in order to get the job done more quickly. This fellow worker also kept the departmental records showing work completed daily and monthly.

Employer: State hospital.

Hours: Forty hours per week.

Assistance—Supervision: To some extent the fellow worker is an assistant who regularly keeps all records and sometimes assists with finding the correct parts for a job, sawing, etc. At times, patients are also assigned to help in the carpenter shop and our interviewee supervises these patients and uses their assistance. Supervision by the shop foreman chiefly takes the form of assigning priorities to the work waiting for attention.

Equipment, Adaptations, Records: Routine carpenter's tools, plus some power equipment such as bandsaw, table saw, joiner, electric drill, and dowel machine. No adaptations on these, but does have measuring equipment brailled. Records are kept by fellow worker.

Travel: To and from place of employment only.

Vision: A totally blind person is successful in this work.

Education and Training: The interviewee did not regard his high school education as important to job success; work experience as a carpenter (as a seeing person) was important. Feels that he was up to production within a month on this job.

Compensation: \$112 per week.

Plumber 862.381 (1, M, 51, can do limited reading)

Job Description: The plumber's trade is quite well defined and complete descriptions of the work can be found in most books about jobs and careers. Our interviewee does only emergency and repair work and is employed by a large firm, busy enough to select for him work they believe he can handle. He uses a retired man as a driver and, to some extent, helper.

Although he has some vision he says he does most of his work by touch and is not disturbed at having to work in dark places—a disadvantage to the plumber who depends wholly on sight. He always has some idea of the nature of the problem before he reaches the job, has no difficulty in locating the trouble exactly, and repairing it. He deals constantly with the customer public, explains what is needed, the cost, and whatever choices there may be with regard to how the repair could be done. He can record the time and materials used on each job by conventional means.

Employer: Large plumbing contractor.

Hours: 40 hours a week.

Assistance—Supervision: He uses his driver to some extent as an assistant. The driver reads the work instruction card, locates the place where the work is to be done, may act as a general assistant. He supervises the driver; since he is always working at the home or place of business of the customer, he has essentially no supervision although the customer's satisfaction provides some check on his work.

Equipment, Adaptations, Records: Uses the standard tools of the plumbing trade without adaptation. Can note materials and costs in pencil.

Travel: Must be able to get about unfamiliar places to do his work although his driver takes him to the job. Feels it would be a great advantage if he, himself, could drive.

Vision: Has sufficient vision to do limited reading and believes some vision essential to locating problems, and efficient handling of tools and material.

Education and Training: Tenth grade in school. Has janitorial and maintenance experience, plus on-the-job training as a plumber. Has to pass a plumber's test and a union test.

Compensation: \$120 a week.

Glazier Helper 865.887 (1, M, 29, can do limited reading)

Job Description: One of the things most of us take for granted is the glass in windows. It keeps out the cold in winter (and heat in summer!) while it lets in the light. It protects us from weather, insects and, to some extent, from noise. Have you ever wondered how it gets into those window frames to do its work?

In the manufacturing process (not after the windows become part of a building) glass is installed while the window frame is lying flat. One worker uses a glue gun to put glue around the sash. Our interviewee then sets the glass into the sash, fitting it into the groove on the bottom, dropping it carefully into place, and pressing it into the glue. Then the worker uses another gun to shoot little metal points into place to hold the glass, and may add putty.

Sometimes, however, instead of glue, putty is used. With this method, our interviewee dips each edge of the glass into a trough of putty, then drops his glass into place in the sash. Then his fellow worker uses the putty knife to cut away excess putty on the back.

Our interviewee must also go to the storeroom, on another floor, and bring up the supply of glass. He takes the small truck and piles the glass on it, brings it up the elevator to the work area. He also carries some responsibility for inspecting the glass as he works with it; he must not use cracked or scratched pieces.

This is an active and somewhat monotonous job. The only variety comes from working on different sizes of sash, or on door frames instead of windows. The process is always the same. He is not allowed to do the gluing because the glue gun does not always work perfectly, and he could not see if it were missing some spots. Therefore, he is limited to the activities described above.

Employer: Manufacturer of sash and doorframes.

Hours: 40 hours per week.

Assistance—Supervision: No assistance, but works with a partner who does the parts of the job which require more vision. All activities are more or less supervised by this person to whom he acts as helper.

Equipment, Adaptations, Records: Uses little equipment except the truck to bring the glass from the storeroom or the trough of putty into which he sometimes dips the glass. Because of vision, he is not al-

lowed to use the glue gun or the gun which places metal points (they fear he might break the glass with this latter). No records.

Travel: Must travel to storeroom, propelling truck with glass.

Vision: Must have good travel vision plus enough to distinguish cracks or scratches on glass.

Education and Training: Had fifth grade education. No evidence that formal education is important in this work. Training on the job, and says he had mastered the job within a couple of days.

Compensation: \$1.40 per hour.

Assembler—Metal Parts

Aircraft	866.381
Automotive	806.887
Furniture	739.884

(11, MF, ages 24-61, eight totally blind or light perception, two with object perception, one able to do limited reading)

Job Description: In describing assembly jobs, the title frequently relates to the end product, rather than to the specific item assembled. The workers described in this section perform assembly operations chiefly in the aircraft and automotive fields (plus one who assembled parts for metal furniture), but we will not describe all the jobs in detail since some are very like jobs relating to other products.

For example, one of these workers is a subassembler on gears; he polishes, deburrs, and uses a special tool to put snap rings on shafts. Another, whose job title is tube mechanic, cuts, deburrs, and flares tubing; at times, he adds fittings such as a nut and sleeve, or may remove insulation on tubes which are to be reconditioned. A deaf-blind worker assembles back-up lights and clearance lights for trailer trucks; he uses a jig to perform the assembly operation, and puts his finished work on a conveyor to be taken on to the next worker. Another man completes the operations necessary to make battery terminals by putting bolts in them; the bolts used to be put in by hand, but now he uses a $\frac{1}{4}$ HP electric motor designed especially for this job so that it might be called a machine assembly task. A woman puts pin bearings into cups, again using a machine for this purpose; she loads the machine with the bearings which are brought to her in large cans, adds kerosene, and starts her machine. Then all she has to do is place each greased cup into a jig and start it into the machine which automatically fills the cup with pin bearings correctly positioned.

More specific to the automotive field is the work of a man who puts five lug nuts on each of the two left wheels of cars, and tightens them up. The car—the whole chassis with the motor already in it—

comes down a moving assembly line. He puts the five nuts on the lugs by hand, and threads them by hand for a thread or so, then moves his "gun" (air driven socket wrench) into position, and it tightens all five nuts at once. At the time he does this, the wheels are about waist high, or chest high, depending on the kind of car. His "gun" hangs over his head on a counterbalance. As he threads the nuts by hand, he tries to get the wheel into a certain position so that the five sockets of his "gun" will easily match the nuts; but he feels with his left hand, as he positions the "gun" with his right hand, to be sure of matching them. If one nut falls off, as occasionally happens, he uses a small air-driven single socket wrench to put that nut on. He comments that many of his sighted fellow workers put the nuts into the sockets, and then put them on the lugs, and tighten in one movement. Because the nuts fall out rather easily and he cannot tell when they do, he cannot use this quicker method. This places him at some disadvantage. To balance this, the company removed from his work assignment one very small operation which most, but not all, of the sighted workers do.

Another automotive worker assembles rocker arms and exhaust valves. The rocker arm is about a foot long and weighs about four pounds; there are eleven different pieces to be assembled on it. Some of his parts are brought to him on skids, others come to him on a conveyor. He assembles the parts, and uses an air gun to put the adjusting screw in place. The exhaust valves are about eight inches tall, have eight parts, and weigh about two pounds when finished. Here, he must use pins to fasten the pieces, and a gauge to check measurements. When his work is finished, he sends it down a chute to the final inspector.

Still another job in the automotive field is the making of brake pedals, both the small pedal for ordinary use and the large pedal of the power brake. In both cases, he puts chrome trim on them, but the process is different, depending on the size of the pedal. For the large pedal, the stock comes to him on skids, and chrome trim in boxes. He fits the trim on 110 pedals by hand, laying them out on his bench; then he runs that whole group through an automatic press which crimps the chrome in place. As they come out of the press, he throws them into a box, and when it is filled, he begins packing them into boxes which some other worker picks up for shipment. For the smaller pedal, he uses another automatic press which has eight stations and keeps going around. As he assembles the chrome on each pedal, he places it into a station, and the press crimps it and throws it out the other side. He is responsible for seeing that stock is ordered so that he is always well supplied, and he is also somewhat responsible for deciding which pedal to make on a given day, since he makes the one which is in shorter supply on the line following him.

The man who works on metal furniture assembles the drawer suspension mechanism—that wonderful combination of rollers, rods and bumpers which make it possible to pull out heavy file drawers with little more than a touch of the finger. Here, twenty-eight pieces of material are involved: three pieces of steel which form a groove, steel bumpers which must be placed on the groove, etc. He does this entirely by touch, using an electric screwdriver to complete the assembly. At times, he does other work, such as drilling a hole in the rod for a typewriter carrier, or a type of assembly which requires the use of a riveting machine.

Employers: Automotive, aircraft and metal furniture manufacturers.

Hours: Standard work week with occasional overtime.

Assistance—Supervision: Most of these workers have their production records written by someone else, often an inspector or the supervisor. Several indicate that, at times, they fall behind the required production, or too much work piles up at their station, and someone is sent to help; but they state that this can happen to a seeing worker too. Little extra supervisory attention is involved.

Equipment, Adaptations, Records: Most of the equipment used by these workers is standard and without adaptation. Several report that they must have their parts placed always in the same spot, and they have “trained” the stockboys so to place it. About half of them are allowed to move about the plant only with a guide because the company regards the work area as dangerous. It has been noted above that the man who tightens nuts on the lugs of car wheels has had a small adjustment in his work assignment to compensate for a slightly slower procedure; he also indicates that longer sockets were put on his “gun” to enable him to get his fingers under it to position it. The woman who fills bearing cups has to be sure they are not cracked; to do this, she taps two together, since the sound will tell her. The subassembler in the aircraft company says he sometimes needs help to find seldom-used parts in the parts cabinet because he cannot read the numbers on them. Another assembler has had a special jig made for his use since he must use touch in place of vision. All these workers keep some time or production records, with the aid of fellow workers.

Travel: To and from the place of employment only.

Vision: Totally blind workers are successful in these jobs.

Education and Training: Five of these workers are high school graduates, and one had vocational training in electronics (which is not used on his present job). The others vary in education down to as little as fifth grade. Formal training does not seem as important as on-the-job training.

Compensation: About half of these workers are making about \$2.85 an hour; the others vary down to \$1.25 plus piecework bonus.

Building Maintenance Man, Boilerhouse Repairman 899.381, 805.381
(5, M, ages 38-64, at least limited reading)

Job Description: Are you handy with tools? If you are, perhaps you may qualify for a career in some aspect of building maintenance. The building maintenance man for a large hotel, apartment house, office building, or manufacturing plant must be able to do simple repairs such as replacing broken window panes, freeing a clogged drain, replacing light switches and bulbs, and repairing electric motors. In addition, he may be called upon to do some carpentry work involving the use of a hammer, saw, screwdriver, and power tools such as drills or saws. Two interviewees in this group were building maintenance men.

Another aspect of building maintenance involves heating, refrigeration, electric power, and plumbing. Persons involved with this work may be known as stationary engineers and may be required to obtain a state license in order to operate and maintain boilerroom and related equipment such as air compressors, electric generators, and water pumps. In addition, such persons may be responsible for maintaining electric power lines, installation of new switches, and be generally responsible for all power requirements at their place of employment. One interviewee was a boilerhouse repairman.

In smaller buildings, the same individual may handle the duties of both boilerhouse repairman and building maintenance man. Their activities involve a combination of both of the above jobs and may vary according to the activities in which their employer is engaged. Two interviewees were combination building maintenance men and boilerhouse repairmen.

An interesting feature of these jobs is the variety of duties which can be involved. To someone with mechanical ability, a multi-activity job can almost completely eliminate boredom.

Employers: Three persons were employed by private industry, one was employed at a hospital, and one by a charity.

Hours: Forty hours per week. Five or five and a half days per week.

Assistance and Supervision: No one reported the necessity for assistance. Supervision was similar to that given sighted employees and was generally casual.

Equipment, Adaptations, Records: Equipment included manual maintenance tools such as hammers, screwdrivers, pliers, wire cutters, saws, wrenches, etc. and power equipment such as drills, saws, and sanders. No adaptations were reported. One person kept records in the conventional manner for an inventory of maintenance parts.

Travel: On-the-job mobility is required in addition to travel to and from place of employment.

Vision: A totally blind person could not be successful in this job because of the necessity of on-the-job mobility and a visual level sufficient to handle a variety of repair work.

Education and Training: For this group, education varied from sixth to tenth grade. Evidence of mechanical ability is an important qualification.

Compensation: Ranged from \$260 to \$390 per month.

Service Station Worker (owner) 915.587 (1, M, age 34, limited reading—drives car occasionally)

Job Description: Putting the “tiger in our tank” is part of keeping our automobiles “on the go” and is the prime function of service stations across the country. The person interviewed owned a combination service station and grocery store in a rural area. His primary activities were concerned with the operation of his service station. Duties involving services to automobiles included pumping gasoline by means of an automatic gas pump so familiar to all of us, changing oil and giving “grease jobs” with the aid of the ordinary service station grease rack, washing and waxing, and checking and repairing tires. In addition, the interviewee conducted his own inventories and ordered his own supplies. On weekends, it was necessary to hire a part time employee because of the volume of business and the interviewee reported that his vision did not affect his ability to supervise this person. A set of business records was required for tax purposes and the interviewee kept these by conventional means with the help of his wife. This assistance was not provided because of the interviewee’s vision, but to aid him with the volume of work he had. No automobile repairs were done. He did, however, feel that he performed his job as a sighted person and also felt that a totally blind person could not be successful in this job because of requirements of on-the-job mobility and a sufficient level of vision to service the automobiles.

Employers: Self-employed.

Hours: At least 80 hours per week of seven days.

Assistance—Supervision: No assistance because of vision, but the interviewee had a part time employee on weekends and kept all his business records with the help of his wife. This assistance was because of work volume. No supervisory problems because of vision were reported.

Equipment, Adaptations, Records: Automatic gas pumps, grease rack, jack, and tire irons with no adaptations. Records were kept by conventional means with the aid of the interviewee's wife.

Travel: In addition to travel to and from his business, one-the-job mobility is a requirement.

Vision: At least object perception appears to be necessary in this work (see Job Description).

Education and Training: Service station experience and some mechanical ability appear to be more important than formal education. The interviewee studied the service station manual supplied by the oil company and it took him about six months to learn all his duties.

Compensation: Approximately \$250 per month (from the service station).

Carton Inspector 920.687 (2, M, ages 25-39, both have travel vision)

Job Description: Bottled soft drinks are often packaged in cartons (usually containing six bottles) which fit into wooden cases. When bottles are returned to be washed and refilled, the cases and cartons are, of course, usually returned as well. The cases are re-used many times, and if the cartons are clean and in good condition, they may also be used again.

However, since the cartons are more fragile, made only of heavy paperboard, they must often be replaced by new ones. Our interviewees worked on a line down which cases moved past them. If they noticed dirty or damaged cartons, they quickly pulled them out and replaced them with new ones; or, of course, if the cartons were missing from a case, new ones had to be put in. At times, cases are returned with "foreign" cartons in them—cartons from another brand of soft drink. These must also be pulled out, and replaced. Roughly seven or eight thousand cartons are replaced daily.

Replacement is made easy by a machine which opens the cartons from a flat or compressed form, and drops them into place. When there is something wrong with the machine, the carton inspector has to perform these operations by hand. He must insert flat cartons into the machine, keeping it supplied. At times, he must clean and oil the machine, and he is responsible for the general cleaning and neatness of his work area. At times, he may assist on the bottle washing machine, but he never takes full responsibility for this. Considerable energy, some dexterity, and good attention to a rather repetitious job are required.

Employer: Soft drink bottler.

Hours: Standard work week.

Assistance—Supervision: No assistance is needed in actual performance of the job, but is only one of several inspectors on the line; if he misses a damaged carton, the next man gets it.

Equipment, Adaptations, Records: Uses machine which opens and places cartons. No adaptations or records.

Travel: To and from the place of employment only.

Vision: Although these workers use touch to some extent, they must recognize damaged cartons visually.

Education and Training: Although had eighth to twelfth grade education, the chief preparation for this work is on-the-job training, and efficiency can be achieved in a day or two.

Compensation: \$65 to \$75 per week.

Blister Packing Machine Operator 920.885 (1, M, 39, travel vision)

Job Description: In today's self-service merchandising, it is particularly important for the customer to be able to see what he is buying. With small items—and some that are not so small—this is often managed by fastening the item on a card and covering it with clear plastic. This is the Blistopack.

One worker puts the required number of relays into the plastic container, tops it with the card, and pushes the pedal on the machine. A hot plate descends for 12 to 15 seconds and fastens the plastic container and card together, with the relays inside. While one is being processed, he assembles the next so it is ready to go into the machine as soon as the first one comes out. He can tell by touch whether the relays are in the right position. Parts are brought to him and he simply works at his machine on an assembly line basis. The machine automatically turns the assembly into the right position and the hot plate will not descend unless the assembly is correctly in position. Occasionally he must do other types of assembly work to fill in time when there is no work to be done on his machine.

Employer: Maker of electronic parts.

Hours: Standard work week plus occasional overtime.

Assistance—Supervision: Needs no assistance except in making out his production record. No unusual supervision.

Equipment, Adaptations, Records: Uses standard equipment without adaptations. Must keep a production record.

Travel: To and from the place of employment only.

Vision: Vision seems not to be essential to this job. Although he can see objects he states that he works by tactual cues.

Education and Training: Although he went to 11th grade, this work is done on the basis of on-the-job training.

Compensation: \$2.50 per hour.

Food Packager 920.885 (3, MF, ages 38-58, vision varied from totally blind to limited reading)

Job Description: If you have been considering factory work, but do not wish, or are unable, to do heavy physical labor, various food-processing plants may give you an opportunity to find employment. In today's economy, even eggs are often dealt with in a factory setting, where many dozens must be graded, packed, and shipped each day.

Although these and many related jobs are similar in content and purpose, there are also differences between them, and certainly other examples of food packaging would again differ from these examples. In one instance, specially-treated bags are set up under the machine with many spouts or outlets, the weight desired is set on the machine gauge, and the product automatically falls into the sacks, which are then tested for weight and sealed by the worker.

In one of the other cases, the worker picks up a quantity by hand, weighs it, and inserts it in a small plastic bag by pouring it through a funnel. Through practice, the worker has become able to judge accurately before weighing amounts that differ no more than a quarter of an ounce!

When we buy eggs in the store, they all look alike, but that is because they have been painstakingly sorted by hand or machine, and sometimes in both ways. Aside from obvious differences of size, there are other reasons for sorting out eggs as imperfect; many of these classifications can be made best by using the senses of touch or sound. A good egg has a smooth, even shell; those which are sandy or rough are put aside. Cracked eggs too can be identified by touch and sound. If two or three eggs are held at once and moved slightly, the cracked egg will make a hollow sound. Misshapen eggs, such as round, thin, or with overly pointed ends, must also be discarded from those that will be sold as our regular "dozen eggs" in the market.

Job requirements would usually include at least average speed and dexterity with the hands, as all respondents mentioned the need for "keeping up" with the conveyor belt system that brought the material to their station. All also mentioned that with experience on the job, they became increasingly able to make fine discriminations of weight or texture. This is part of a team operation, where you will be working with varying numbers of other employees doing the same or similar types of jobs.

Employers: Food manufacturers, egg-processing plant.

Hours: 40-48 hours per week.

Assistance—Supervision: This job, involving working on an assembly line or conveyor belt system with co-workers, is done under the direction of a foreman or group leader, the same as it would be for sighted workers only. In all cases, the product routinely progressed to some sort of inspection department. All of these workers mentioned occasional casual assistance, chiefly from their co-workers, to report changes in color or material that has dropped to the floor.

Equipment, Adaptations, Records: In two cases, the worker had to take a reading from a scale, which had been adapted by removal of the glass cover, and extension of the indicator so the worker could tell the weight of the contents by touch rather than by sight. Other equipment, such as a funnel and a device to hold a bag open, was the same as used by the sighted workers. One man used an egg grader which separated eggs by weight. In some cases a rough tally was kept of units completed.

Travel: Mostly to and from work.

Vision: Totally blind workers are successful in this job.

Education and Training: All mentioned on-the-job training, though not very intensive training was needed. Educational background varied, but was not judged as having much influence on job performance.

Compensation: \$58-\$67 per week.

Packager or Labeler (Machine) 920.885 (1, M, 50, object perception)

Job Description: A number of machines contribute to the final packaging of canned food products. Cases of filled cans are trucked to the worker who lifts the case, dumps the cans on a table, and allows them to roll through the labeler, a machine which applies glue and rolls the paper label around the can. This machine also positions the labeled cans so that, when the worker presses a rod, they are fitted neatly back into the case. As the case moves down a roller, the worker glues it shut, and, finally, it is lifted off the roller and stacked on trucks to go out. Obviously one worker cannot do all these operations at the same time but our interviewee moved back and forth among them, as needed.

At times, he also used another machine to stitch boxes, and he may even assist in loading trucks. All these operations require a good bit of lifting and moving about so that physical strength and energy are rather important.

Employer: Canning factory.

Hours: Usually 40 hours a week. May be asked to work overtime during busy seasons.

Assistance—Supervision: Requires no assistance in the operations described. At times, cans are packed by hand and he is not included in this because he cannot see the labels to position them correctly. Supervision is constant and close for all workers in this department.

Equipment, Adaptations, Records: Uses labeling machine and stitching machine. May use simple tools to adjust machine for different sizes of cans. No adaptations. No records.

Travel: Has to be able to move materials on trucks around a large warehouse type of area. Must have travel vision to avoid the many objects and trucks which are moved around the area.

Education and Training: Had three years of high school but it is not evident that formal education is important to this job.

Compensation: \$1.55 per hour.

Package Sealer 920.885 (3, M, ages 26-51, all with some ability to read ink print)

Job Description: In many manufacturing processes, the last step before shipping the product is sealing some standard number of items into cartons.

Usually the cartons have been filled automatically, and come down a conveyor belt to our workers. One worker seals his cartons by using a pot of glue and a brush; he must quickly brush the glue on the correct area of the carton top, close the carton, and lift it off the conveyor and onto a flat. Another worker closes his cartons with steel bands. To do this, he inserts a steel band into the machine, places the carton in the right position, and the machine automatically fastens the band tightly with a clip. He must then push it along on the conveyor which carries it to the shipping room. The last of these workers seals his cartons by taping them. He must also stencil a contract number and another code on each carton; the stencils are provided for him and cut so that if he puts the bottom of the stencil to the edge of the carton, the number goes in the right place. Finally he, too, lifts the carton onto a skid.

These jobs require a lot of energy and considerable fairly heavy lifting. One of these men states that he lifts ten to twelve thousand pounds per day. Usually this is part of a line operation, and must be done at a regular and fairly fast pace. The job also tends to be monotonous.

Employers: Manufacturing companies.

Hours: Standard work week.

Assistance—Supervision: Help is rarely needed unless an order sheet comes through that it not legible; then someone else must read it. Supervision is in no way unusual.

Equipment, Adaptations, Records: All use standard equipment and work in the usual way. The man who uses stencils has learned to position them to the edge of the carton to get the code in the right place, but this is probably how a sighted worker would do it, too. Some of these workers must keep track of how many loads they complete. They are able to do this by conventional means.

Travel: To and from the place of employment only.

Vision: All have enough vision to do some reading; it is not clear whether this is really needed on the job.

Education and Training: One has ninth grade, the other two twelfth grade education, and there is no evidence that this formal education is required.

Compensation: From \$1.30 to \$2.35 per hour.

Grocery Bagger 920.887 (1, F, 46, read)

Job Description: If you like being helpful and enjoy a job where there is constant contact with an ever-changing public, work as a bagger in a grocery store or supermarket would be worth considering. Another advantage to work of this sort is the large number of possible employers, plus the fact that with the stores being located near or in residential areas, it may be possible to find work quite near your home.

The bagger stands near the check-out lines, and packs the groceries as the cashier finishes checking each item. By packing so that heavy things are on the bottom of the bag, and distributed through the various bags, the packer makes the housewife's job easier. The entire process of shopping goes more quickly and easily when the cashier does not have to stop to pack the groceries, but can go on to the next customer.

The grocery bagger must be willing to help out in other ways, such as straightening stock, and returning items to their proper place. A good memory for prices and location of different merchandise will help.

Employer: Supermarket.

Hours: 40 to 44 hours per week.

Assistance—Supervision: Works with cashier or other employees at all times. No particular supervision, or need for assistance.

Equipment, Adaptations, Records: No use of any of these on the job.

Travel: Mostly to and from work. Varied amounts in the store itself, depending on whether helping in stock room, or working with cashier.

Vision: This interviewee was able to read with a special lens. Most parts of the job could be handled by someone with less vision.

Education and Training: Although this interviewee was a high school graduate, there is no particular level of education required. Training was on the job, and as long as she keeps up with the cashier, she is performing efficiently.

Compensation: \$60.00 per week.

Packager, Hand 920.887 (16, MF, ages 22-56, vision totally blind to limited reading)

Job Description: In most cases this is a factory job, where the worker is part of a team operation rather than working alone. In any type of manufacturing plant, one of the last operations through which a product moves before it leaves the factory is packing for shipment. The actual product may vary in size or use from the pills of a drug manufacturer to automobile engines which are sent to an assembly plant. While many factories use machines to do the complete packing job, there are still a great variety of products which must be packed by hand, either singly or in quantity for a single container.

The hand packager generally is not responsible for getting his material from some central supply; it is brought to him by another employee or sometimes on an assembly line. Using various protective materials—such as paper, rust-inhibiting paper, special cartons, or excelsior—the packager surrounds the item so that moving and shipping it will not damage the product.

The purpose of this job is to protect the product, so the chief requirement is a feeling of responsibility for this protection. In some cases, where the work is done on an assembly line, it may be important to have good manual dexterity and the ability to work quickly. In other instances, where large items are to be packed, physical strength may be required.

Employers: Chiefly manufacturers of varying products, from drugs to automobiles. An Army Depot. A wholesale bakery.

Hours: 40 hours per week.

Assistance—Supervision: Almost all of those interviewed described moderate supervision of the sort given by a foreman who is almost always nearby, or who checks the work frequently during the day. No regular assistance was required, but in several cases there was informal co-worker assistance in finding dropped materials, or reading labels.

Equipment, Adaptations, Records: Most workers use no equipment other than occasional hand tools such as scissors, knife, tape dispenser, screw driver, etc. No adaptations were made on any of these because of visual problems. Very little record keeping is involved in this type of work, but in some factories a simple tally, of number of items completed, was required.

Travel: Chiefly to and from work, but some reported moderate to considerable travel throughout the plant, which may of course range from small to quite large and complex.

Vision: Ranges from totally blind to limited reading. One-third of this group of interviewees is totally blind.

Education and Training: Schooling varied widely, but there is no special level which is required for seeking this employment. Most workers received short periods of on-the-job training and considered that this was adequate.

Compensation: Varied between \$42.80 and \$110 per week.

Warehouse Man 922.887 *Stockroom Worker* 223.387 (18, M, ages 20 to 55, one person had light perception, all others at least travel vision)

Job Description: Though rarely seen by the public, the warehouse is a very important section of most business or manufacturing establishments. Details of warehouse organization and activity vary greatly with the nature of the materials moving through the warehouse, whether it is involved only with receiving and distributing materials for the use of that organization or whether it is also involved with shipping products out to customers, and the size and nature of the industry, business or agency of which the warehouse is a part.

All of the following were reported, in varying combinations, by our interviewees:

Unloading incoming materials from trucks or freight cars.

Checking whether incoming materials correctly fill the orders; signing for these materials if correct and taking appropriate action when incorrect.

Moving the incoming materials to the proper shelves or sections of the warehouse for storage.

Taking whatever action is necessary to keep stored materials in good condition, such as protecting them from dirt, damage, theft, etc.

Filling orders for materials to go out of the warehouse or stockroom by removing the required items from shelves or other storage areas, counting out the amounts ordered, placing them on pallets, dollies or trucks to go to the distribution point.

When shipping outside the building, packing these outgoing orders so that they will travel safely to destination.

Maintaining various records, such as records of all items coming in or going out, inventory records, orders for materials which are getting in short supply, etc.

Maintaining generally good order and cleanliness in the warehouse or stockroom.

Assembling certain items which are shipped and/or stored unassembled.

Making minor repairs.

Waiting on occasional customers who come to the warehouse or stockroom in person.

Loading trucks to take the materials away.

Since heavy materials must often be handled, one of the major requirements for these jobs is some ability to lift and move large, heavy items. However, this work is eased by modern warehouse equipment, such as fork lift trucks, moving belts, and motorized conveyors of various kinds. Most of our interviewees did not, themselves, use fork lift trucks because of their vision, but they did move materials on various hand propelled skids, dollies or pallets.

No warehouse can be run without records, but many of our interviewees left the record keeping to fellow workers. Often they had to fill orders or check incoming supplies against written records, but if their vision did not permit reading these order slips, this again was done by a fellow worker. This could mean that more of the heavy work fell to the lot of the blind worker. In some cases, they needed help in reading identifying numbers on the stocked materials, but frequently such numbers were large, painted on the cartons or crates, and could be read by a person able to distinguish large print.

Occasionally tools or machines had to be used such as a machine to put metal bands around crates; using these with limited vision did not present problems.

Employers: Private industry employed 15 persons, while state governments employed three.

Hours: 40 hours per week. One person reported some overtime.

Assistance—Supervision: Assistance on visual tasks which occurred only occasionally was given by fellow employees or the supervisor. When considerable reading of orders, etc. was necessary, the work load was shifted so that all this was done by a sighted worker and the blind worker did more of the actual moving of materials. The only type of assistance reported was in reading or making records. Most of this work is done under fairly constant supervision, regardless of the vision of the worker.

Equipment, Adaptations, Records: All forms of hand powered skids, pallets, dollies, and other equipment for moving materials from place to place. Simple tools to cut wires, open crates, fasten packing boxes, make occasional repairs. No adaptations.

Travel: Considerable travel usually required throughout the warehouse and shipping and receiving area, and sometimes throughout the plant.

Vision: Good travel vision usually required.

Education and Training: Formal education appears less important than physical strength and energy.

Compensation: \$43 to \$96 per week.

Materials Handler 929.877 (6, M, ages 29-60, totally blind to limited reading)

Job Description: A successful assembly line manufacturing operation depends a great deal upon coordinating the movement of materials through their various stages of production. Although many plants have some automatic equipment, most of them also need materials handlers to move the finished product as it passes out of the final stage of production. Specifically, materials handlers remove finished products from their final production point, load them onto electric plant trucks or hand dollies (flat-bed wagons), and convey them to packaging, storage, or transportation areas. They may be solely involved with either packaging the finished product, loading, unloading, or delivering it to various areas of the plant for storage or transportation. The interviewees performed various combinations of the above functions, ranging from merely loading plant trucks or dollies to loading, conveying, unloading, and packaging. All but one interviewee felt that they performed their jobs as did their sighted fellow workers, including the use of equipment. One person (totally blind) required assistance in order to separate various colored items into appropriate groups. He received this assistance from fellow workers. One person operated a box stitching machine as a secondary duty and reported no problems connected with this duty. As is true for most assembly line or related jobs, a lot of "hustle" is required on the part of the employee in order to keep the production line flowing smoothly. This is a job where energy is important.

Employers: All the interviewees were employed by manufacturers.

Hours: 40 hours per week.

Assistance—Supervision: One person received assistance from fellow employees when sorting colored items that came past him on the production line. Several others received assistance, also from fellow employees, when reading or marking equipment tickets. There was

no report of any additional amount of supervision given to the interviewees.

Equipment, Adaptation, Records: Equipment included electric transporter trucks, dollies (a type of hand pulled, flat-bed wagon), and one person operated a box stitching machine as a secondary duty. No adaptations were reported. One person kept card records of items taken from the storehouse. This was a form of inventory control and the interviewee kept these records by conventional means.

Travel: In addition to travel to and from place of employment, on-the-job mobility is required.

Vision: A totally blind person was successful in this work. However, this person's job was stationary and required no on-the-job mobility.

Education and Training: Good physical condition and the willingness to perform manual duties appear to be more important than formal education. All felt proficient within several weeks.

Compensation: From \$245 to \$520 per month.

Conveyor Attendant or Material Handler 929.887 (1, M, 43, totally blind)

Job Description: When it is necessary to paint small parts, this is often done by moving them, on a conveyor belt, through a spray of paint. Thus large numbers of pieces can be quickly and efficiently painted at one time.

One man simply hangs such small parts on racks, which are then placed on the conveyor. The parts are brought to him on trucks. He picks them up, one or two at a time, places them on the racks, with sufficient space between so that paint can reach them from all sides; he must be careful not to hang them so close that they overlap, or they will not be entirely covered by the paint.

This is a simple and relatively monotonous job, requiring chiefly speed of movement and the energy to handle large numbers of pieces in a day. He does not actually work on the conveyor, merely places the parts on racks which are then taken, by another worker, to the conveyor. Indeed, because of the nature of the work area, the company wants him to move about only with a guide.

Employer: Automobile manufacturer.

Hours: 40 hours per week.

Assistance—Supervision: No assistance on the job but performs only one limited operation. No evidence of special supervision.

Equipment, Adaptations, Records: The only equipment used are the racks. No adaptations and no records.

Travel: To and from the place of employment only. Employer does not permit travel in the plant without a guide.

Vision: Totally blind.

Education and Training: Completed 12th Grade but no formal education is required for this job.

Compensation: \$2.69 per hour.

Street Cleaner 955.887 (1, M, age 39, travel vision slightly improved by glasses)

Job Description: With a change in seasons and the passage of many people and cars, our streets become cluttered with leaves, paper and dust. As part of the many services provided by municipal governments, street cleaners remedy this situation to the benefit of all citizens. For someone who enjoys outdoor work, this job has the appeals of being active and service oriented.

The activities of the street cleaner involve sweeping the leaves and debris into piles along the gutter and shoveling it onto a truck which hauls it away. The interviewee reported that it was not necessary for him to use his remaining vision to sweep the street, since he could feel the pressure of any accumulation of refuse against his broom. It is probably necessary to have some vision, however, in order to shovel the refuse onto the truck efficiently.

The interviewee also reported that from time to time he helped to dig the city streets to expose water pipes and gas mains for repairs. He used a pick and shovel for this purpose. As a secondary duty, the interviewee reported that occasionally he would be asked to help operate a sewer cleaning machine. This machine had a power operated flexible pipe which could cut through any sewer blockage. The interviewee opened the sewer and entered it through the manhole. He would then feel for the blockage and guide the flexible pipe towards it. The interviewee liked his job and felt that he performed his duties as well as his sighted fellow workers. He was not, however, permitted to direct traffic as was necessary from time to time. This was done by sighted fellow employees.

Employer: Municipal government.

Hours: 40 hours per week.

Assistance—Supervision: The interviewee required no assistance in performing his duties. Supervision was the same for him as for his sighted co-workers.

Equipment, Adaptations, Records: Used the standard tools for cleaning and digging. Also used machine for sewer cleaning without adaptation. No records.

Travel: On-the-job mobility was required in addition to travel to and from the place of employment.

Vision: It would probably be difficult to place a person without object vision in this work.

Education and Training: On-the-job training, which the interviewee received, seems to be more important than formal education. He achieved proficiency in his job within two weeks.

Compensation: \$215 per month.

Film Splicer 962.844 (2, M, 36-42, totally blind and light perception)

Job Description: Home movies are developed on master reels of film, approximately 1,000 feet in length. These reels consist of many small rolls of customers' film (usually 25' long) which are spliced or joined together. The film splicer's duties consist of joining these small rolls of film to form the master reel which is then sent to be developed. The splicing operation is done in a totally dark room and blind workers appear to be more adjusted to such working conditions than are sighted.

The rolls of film are received in the splicing room by means of a light tight chamber with double doors. After the splicer removes the film from its container, he will inspect it for any breaks, nicks, or imperfections by carefully running the film through his fingers. If any are found, it is necessary to cut such portions from the film with an ordinary scissors. It is then necessary to splice these ends of film together by one of these methods: small rivets, gelatin tape, or cement. The splicer identifies the roll of film with a customer by punching a number on both the leader or blank portion of the film and on the box in which the pictures will be returned to the customer.

Then the splicer joins this roll to the master reel by one of the three methods mentioned above. When the master reel has reached a length of approximately 1,000 feet, the splicer will place the reel in a light tight box and send it to the developing department.

Employers: Both had private employers (a photo equipment manufacturer and an equipment wholesale distributor.)

Hours: 40 hours per week. (5 days)

Assistance—Supervision: One of the interviewees received the following assistance from fellow employees: When film was totally defective, another employee would make a notation on a piece of paper and then deliver this film to another department. The blind workers received no different supervision or checking than did their seeing fellow workers.

Equipment, Adaptations, Records: Scissors, gelatin tape, rivet gun, cement with no adaptations reported. No records were required as a regular part of the job. Sometimes, when a time study was conducted, records of the number of rolls were requested, but this was rarely done.

Travel: The only travel required is to and from place of employment.

Vision: Totally blind people are successful in this job.

Education and Training: Both interviewees had high school diplomas and both had formal on-job training of at least a few weeks. Both interviewees reported feeling proficient in less than six weeks.

Compensation: \$250-\$315 per month.

Sign Maker 970.081 (1, M, 46, limited reading)

Job Description: As we drive through the night on super-highways, and on some other roads, our headlights pick up gleaming signs, rendered bright and easy to read by the fact that they reflect the beams of the headlights and glow in the dark. Most of these bright signs are made from a special material called Scotchlite.

One worker makes such highway signs. He makes guidelines to show where each letter or number is to go, cuts the letters and numbers out of a sheet of Scotchlite and applies them to the background or base of the sign. The Scotchlite has adhesive on the back covered and protected by backing paper. When the numeral or letter has been cut out of the sheet, he merely removes the backing paper and carefully applies it to the background, making sure that it is positioned exactly where he wants it. In doing this, he says he works just as fully sighted sign makers do, except that he has to make a very heavy guideline, instead of the fine line most people would use. He uses glass marking pencil to make these guidelines since it works well on the Scotchlite.

At times, he does handle other aspects of sign making. He may cut the bases, using an electric hand saw, may sand them on a belt sander. The background is spray painted, but he does not do this. He does do some hand lettering, using the usual paint and letter brushes for this. Although he has some difficulty drawing the brush down to a hairline, his chief difficulty arises from the fact that his remaining vision is in only one eye as a result of which he finds that his lettering tends to lean to the left if he does not constantly measure or straighten it through use of a triangle. At times, he also does silk screening if a large number of copies of the same are required, because silk screening is faster than lettering.

Employer; State highway department.

Hours: 40 hours per week.

Assistance—Supervision: He needs no special assistance because of limited vision and since his foreman is usually out on the road, he received little supervision.

Equipment, Adaptations, Records: Uses standard equipment for cutting out the letters, making measurements, and painting, but does use glass marking pencil to get heavy guidelines. Uses standard electric hand saw and electric belt sander. His only record is to write into a book what he has completed.

Travel: To and from the place of employment only.

Vision: Has enough vision to do limited reading and regards this as necessary to the job.

Education and Training: Had one year of college where he was an art major and studied lettering. Then had four year apprenticeship, was employed and ultimately owned a sign painting shop before his loss of vision.

Compensation: Roughly \$500 a month.

Film Developer (non-medical) 976.381 (11, MF, ages 20-54, vision is totally blind or light perception for nine, object perception for one, limited reading for one)

Job Description: The darkroom worker is involved with processing color and black and white film, slides, and motion pictures. Almost all developing today is done by automatic machines, and ten of the interviewees operated such machines. The duties of the processor are to prepare the film for the machine, which involves receiving the film through a light tight door, stripping off the protective paper backing, clipping the roll of film onto racks with alligator clips, and in most cases weighting the bottom of the unrolled film with another clip so that it does not curl again. The rack containing the film is then fastened to the conveyor belt of the processing machine, which moves the film automatically, through various chemical baths, to a dryer. The processed film, as it comes out the other end of the machine, is in its negative state. The negatives are then used to print the positives, or picture prints, so familiar to all of us.

It is important for the darkroom worker to be able to determine whether the film is color or black and white. Many of our interviewees reported the ability to feel notches on the side of the film and, in this way, identify the type of film to be processed. From time to time, it is also necessary for the darkroom worker to check the temperature of the chemicals used. Several interviewees reported that they were able to tell the temperature within two degrees by touch; others received help from fellow employees, in this particular task. Replenishing the chemicals is also necessary from time to

time, but most interviewees either received assistance with this from fellow employees, or had an automatic chemical replenisher attachment to the film processing machine. One person did, however, report spending over three hours per week replenishing and cleaning the chemical vats.

It is also true that something can very easily go wrong with the film processing machinery. A film, or at times the whole rack, may drop and have to be retrieved from the bottom of the machine or from the bottom of the vat. The darkroom workers report that the machines are also somewhat temperamental, and need a personal touch to keep them running smoothly. When something does go wrong, the responsibility is considerable, and the emphasis is on speed, for films already in the machine for processing will be ruined if they are delayed in their regular movement from one chemical bath to another. It is at such moments, that the worker is under some pressure.

Certain films, such as slides, may not be developed with automatic timing equipment. For this reason, several interviewees used electric timers, equipped with click stops for each minute. One person reported scratching several marks on the timer's face, in order to feel at what point a particular process was. With this help, they are able to move the film from one vat to another by hand at the correct time intervals. One interviewee worked with a partner in the darkroom and did only the film stripping, while the partner carried the rest of the responsibility.

Employers: Nine were employed at commercial photo finishers, one at an aircraft company, and one at a moving picture film processing company.

Hours: 35-44 hours per week; covering five or five and a half days of work.

Assistance—Supervision: Roughly half of the interviewees reported the need for some assistance from fellow workers, usually in the matter of determining whether the darkroom lights were out, to aid in occasional reading of customer order cards, gauges, and temperatures, or to check chemicals used for film processing. Occasionally, a worker also needed assistance in finding objects which had fallen onto the floor. No unusual responsibility appeared to rest upon the supervisor.

Equipment, Adaptations, Records: The major equipment is the film processing machine, with its racks for negatives, alligator clips, and timer. Equipment for replenishing chemicals and maintaining the vats in good condition may be included in the materials used. The only adaptation reported by these workers was the scratching of the surface of the timer, so that in addition to the clicking sound which indicates the time, it was possible tactually to determine how much

more time remained for a given process. Only one person reported keeping records, which were in the form of index cards of customers. This person had sufficient reading vision to handle this.

Travel: The place of employment is usually limited in that it is the darkroom itself—not usually a very large place for movement. Consequently, the travel required for this job is to and from the place of employment only.

Vision: Totally blind persons are successful in this job.

Education and Training: Although most of those interviewed had completed high school, and several had done work at the college level, none felt that their formal schooling had much to do with their job success. All had received on-the-job training and regarded themselves as proficient in some two to four months.

Compensation: From \$285 to \$475 per month.

X-ray Developer—Darkroom Worker (medical) 976.885 (27, MF, ages 21-48, seventeen totally blind or light perception only, ten vary from object perception to doing some reading)

Job Description: The X-ray darkroom worker has a monotonous but vital occupation. Every day he may process four to five hundred X-rays for doctors, dentists, or surgeons, X-rays which answer questions on diagnosis, determine details of operations, and directly affect the life status of numerous patients. The X-ray films are usually developed by means of an automatic processing machine. The darkroom worker removes the film from its leaded light-tight container known as a cassette, places the film on a flasher which affixes patient information on a corner of the film for later identification, and clips the film onto racks which automatically feed into the developer. The machine then develops the X-rays in six to seven minutes and automatically delivers them to technicians who study the results.

Sometimes a machinery breakdown may make it necessary to develop the film manually, making use of chemical baths. Under these conditions, exact timing is important and this is achieved by devices which signal completion of each part of the process by a bell sound. Manual film development also requires checking chemical temperatures and reading power flow meters. Most interviewees received assistance with such tasks from fellow employees. Most of the newer automatic X-ray developers have ready mixed chemicals which need only to be added to the vat baths periodically. Many older models, however, still require hand mixing of chemicals. Most of the interviewees, where such duty was applicable, were not required to mix the chemicals or did so only with assistance from sighted fellow employees. These persons also used a stirring stick with notches to indicate the level of the chemical in the vat.

Though X-ray film developing is for the most part automatic, the demand for such films by the medical profession places a heavy burden on the X-ray darkroom worker. Most interviewees reported that they were constantly busy, sometimes bored by the routine perhaps, but extremely proud to be of service to the medical profession and to their community in such a vital field.

Employers: Twenty-four were employed by hospitals, one by a private outpatient clinic, one by a radiology institute in a university, and one by a film processing company.

Hours: 40 to 45 hours per week; many reported a 5½ day week.

Assistance—Supervision: Only about half of the interviewees required assistance which was provided by fellow workers. This consisted of filing X-rays, reading thermometers and power flow meters, mixing chemicals, and cleaning cassettes. Almost all of the interviewees reported supervision as casual; apparently having a blind worker in this job places little additional burden on the supervisor.

Equipment, Adaptations, Records: The equipment consists of cassettes; X-ray film; automatic film developer; manual developing equipment such as vat baths, clips, racks, etc.; the patient information "flasher;" and combination measuring stick and chemical stirrer made especially for blind workers by Kodak Company. No other adaptations were reported. Only a few persons reported keeping records and these chiefly for their own use. The records show the dates when chemical solutions were changed and record the inventory of film supply on hand. These records were kept by both conventional methods and by braille, depending on the vision of the worker.

Travel: Only travel to and from the place of employment is required.

Vision: Totally blind persons are successful in this work.

Education and Training: About two-thirds of the interviewees had high school diplomas and five actually had attended or even graduated from college. However, college is definitely not necessary to this job, although some interviewees indicated that training in radiology would be extremely helpful. On the job training in the use of the specific equipment involved is typical and most of those interviewed felt that they achieved full proficiency in something from three weeks to three months.

Compensation: Varies from \$205 to \$390 per month.

Ozalid or Blue Printing Machine Operator 979.782 (1, M, 52, travel vision)

Job Description: Among the most valuable assets of many manufacturing organizations are the prints which give all the details of products made, machines used, tools, and even the building itself with its power lines, etc. The original drawings or the blueprints made from them may, in certain cases, be kept under high security control because of the value of the information. When some worker needs a print, he must bring a signed requisition for it, and only when this has been approved can a copy be made of this original.

One interviewee runs the Ozalid machine which makes these copies. He works in a room where the original prints are filed. Four other workers also have responsibilities in this room, such as the pulling and filing of prints, accepting requisitions for copies, etc. When the requisition has been approved, it is turned over to the Ozalid operator. He determines the type of material he needs for a clear copy, depending on whether or not it is a sepia print, decides how to set the dials on his machine to get the proper exposure, with the proper timing. He has marked his dials with adhesive so he can easily find the most frequently used settings.

Then he feeds the original print and the sensitized paper into the machine where it automatically moves through on a belt and rollers, and feeds back out of the top of the machine with the copy made. In handling these papers, he must move quickly, must have deft, and accurate hands. Finally, he must cut his roll of sensitized paper at the proper places.

This is definitely a technician's job, requiring deftness of hand, accuracy of judgment in setting the machine, and judgment with regard to the clarity and general acceptability of the finished copy. Although he must often work quickly because there are many requisitions to be filled, he must also take pride in his work, must find satisfaction in making a clear and evenly exposed print.

Employer: Manufacturing plant.

Hours: Regular work week.

Assistance—Supervision: In the direct sense requires no assistance, but he does have his fellow workers, who write up the requisitions, use heavy black crayon so he can read it. A supervisor for the entire file room is constantly available to answer questions and check the quality of work completed.

Equipment, Adaptations, Records: Uses standard equipment except for putting adhesive on his dials so he can set them without visual checking. No records.

Travel: To and from the place of employment only.

Vision: Must be able to read the requisitions in heavy crayon, determine from observation the nature of the settings to be used on his machine depending on the nature of the original print.

Education and Training: Had a year of college, but this is not related to his present work. A high school education plus on-the-job training would appear adequate.

Compensation: \$1.50 per hour.

APPENDIX

BLIND PERSONS IN CLERICAL, SERVICE AND INDUSTRIAL JOBS

Responses to Interview Questions Employees

<i>Sex—Race</i>	<i>Number</i>	<i>Percent of Total</i>
Male—white	539	71.7%
Male—non-white	38	5.1%
Female—white	158	21.0%
Female—non-white	16	2.1%
Not stated	1	.1%
Total	752	99.9%
Total male	577	76.7%
Total female	175	23.3%
Total	752	100.0%
Total white	697	92.7%
Total non-white	54	7.2%
Not stated	1	.1%
Total	752	100.0%
<i>Age</i>		
To and through 19 years	8	1.1%
20-24 years	73	9.7%
25-29 years	98	13.0%
30-34 years	86	11.4%
35-39 years	104	13.8%
40-44 years	117	15.2%
45-49 years	99	13.2%
50-54 years	79	10.5%
55-59 years	48	6.4%
60+ years	37	4.9%
Not stated	3	.4%
Total	752	100.0%
<i>Type of Employing Organization</i>		
Self-employed	63	8.4%
Manufacturing	252	33.5%
Sales and distribution	62	8.2%
Communication (as newspaper, radio, TV)	12	1.6%
Medical (hospital, physician, rest home, health club)	114	15.2%
Service	97	12.9%
Educational, religious, social service	33	4.4%
Insurance, banking, etc.	10	1.3%
Government (all local, state and federal agencies)	94	12.5%
Sheltered	14	1.9%
Not stated	1	.1%
Total	752	100.0%

<i>Job Title</i>	<i>MAIN DUTIES</i>		<i>SECONDARY DUTIES</i>	
	<i>Number</i>	<i>Percent of Total</i>	<i>Number</i>	<i>Percent of Total</i>
Medical transcriptionist	23	3.1%		
All other straight transcription	39	5.2%		
Secretary—uses braille shorthand or vision. Writes many letters without dictation, has varied duties; court reporter; trans- lator	7	.9%		
Legal clerk—transcription, copies legal doc- uments, etc.	1	.1%		
Typist—switchboard operator	2	.3%		
General office work—includes some typing, use of phone, maintaining records, bill- ing, etc. General responsibility for a varied job, not mainly typing.	12	1.6%	27	3.6%
Supervises or runs (owns) secretarial ser- vice	1	.1%	1	.1%
Receptionist (including use of phone) and general office work	4	.5%	5	.7%
Librarian, cataloguer, registrar—keeper of important records	6	.8%	1	.1%
Switchboard operator	10	1.3%	2	.3%
Direct dialing operator and other telephone operators working for phone companies .	3	.4%		
Switchboard operator and receptionist	2	.3%		
Answering service	8	1.1%	1	.1%
Takes telephone orders—including ads, re- quests for information, etc.	4	.5%	2	.3%
Messenger service (hospital)	1	.1%	1	.1%
Switchboard operator—cab dispatcher	4	.5%		
Dispatch clerks, workers in mailing and receiving and distributing of mail	4	.5%	1	.1%
Supply clerk, tool room clerk, inventory clerk	9	1.2%	5	.7%
Public contact and sales, desk clerk, inter- preter, guide, investigator, buyer, order writer, handles complaints	21	2.8%	16	2.1%
Masseur, masseuse, attendant	23	3.1%		
Darkroom worker—non-medical	12	1.6%		
Darkroom worker—medical	27	3.6%		
Film splicer	2	.3%		
Nurses' aid, orderly, ambulance helper, gen- eral helper in medical setting	20	2.7%	1	.1%
More specialized aids and helpers—in lab- oratories, OT, medical instrument repair, etc.	10	1.3%		
Housemother—nursery school aid, boarding house manager	6	.8%		
Cook	4	.5%		
Dishwasher—automatic	8	1.1%	1	.1%
Dishwasher—pots and pans, not automatic	4	.5%	1	.1%
Kitchen workers with varied tasks, includ- ing preparation and service of food, clean- ing up, stacking dishes, washing dishes, pots and pans	14	1.9%	5	.7%

<i>Job Title</i>	<i>MAIN DUTIES</i>		<i>SECONDARY DUTIES</i>	
	<i>Number</i>	<i>Percent of Total</i>	<i>Number</i>	<i>Percent of Total</i>
Waiter, waitress, counterman, supervisor of food preparation and/or service	11	1.5%		
Bakers	7	.9%		
Other food processors, packers, distributors	15	2.0%	2	.3%
Elevator operator	7	.9%		
Cosmotologist—beauty operator	2	.3%		
Floral designer	2	.3%		
Laundry worker	17	2.3%		
Valet—presser	2	.3%		
Piano tuners and repairmen	20	2.7%		
Filling station worker	1	.1%	2	.3%
Janitor—custodian—general care and cleaning of buildings and grounds	30	4.0%	19	2.5%
Street cleaner	1	.1%		
Building engineer (heating system) and maintenance	6	.8%		
Porter—brings work to other workers, takes things from place to place	5	.7%	5	.7%
Watchman	1	.1%		
Warehouse work—unload and load trucks, move heavy things, stock boy	18	2.4%	7	.9%
Wrapper—packer	17	2.3%	4	.5%
Boxmaker, sorter, bundler—anything related to making packaging materials ...	13	1.7%	5	.7%
Laborer—road, construction, various heavy jobs, usually outdoor	8	1.1%		
Drill press operator	9	1.2%	1	.1%
Milling machine operator	4	.5%		
Lathe operator	4	.5%		
Operates various standard machines, as press, drill, lathe, band saws, threader, tapper, sander	21	2.8%	3	.4%
Operates one or more special machines ...	26	3.5%	3	.4%
Machine operator and assembly work	12	1.6%	1	.1%
General work in manufacturing and shop .	5	.7%	1	.1%
Deburring	10	1.3%	2	.3%
Stripper—any disassembly	2	.3%		
Kennel master	1	.1%		
Inspector and testor	10	1.3%	3	.4%
Hand assembly	37	4.9%	4	.5%
Assembly with some use of machines	17	2.3%	1	.1%
Bench work	10	1.3%	1	.1%
Welder	2	.3%		
Dowler (furniture)	1	.1%		
Upholsterer—various activities	8	1.1%	1	.1%
Degreasing, cleaning parts	5	.7%	1	.1%
Conveyor line attendant	1	.1%		
Foreman—machine shop, assembly, packing, etc.	3	.4%		
Ozolid machine operator	1	.1%		
Glove shaper	2	.3%		
Hemmer	1	.1%		
Bag turner	1	.1%		

<i>Job Title</i>	<i>MAIN DUTIES</i>		<i>SECONDARY DUTIES</i>	
	<i>Number</i>	<i>Percent of Total</i>	<i>Number</i>	<i>Percent of Total</i>
Book skidder	1	.1%		
Puts glass in window sashes	1	.1%		
Picture frame machine operator	1	.1%		
Electrician's helper	2	.3%	1	.1%
Plumber	1	.1%		
Painter's helper	3	.4%		
Wood worker	1	.1%	1	.1%
Auto mechanic and repairman	12	1.6%	1	.1%
Transmission repairman	12	1.6%		
Telephone repairman	4	.5%		
Electric motor and appliance repairman ..	5	.7%		
Radio, TV, etc. repairman	8	1.1%		
Repair work in any way related to shoes and machines used for	2	.3%		
Repair related to crates, wood, carpentry, painting and refinishing	4	.5%		
General motor repair (outboard motors, fuel pumps, hydraulics, mechanics)	11	1.5%		
Saw sharpener	2	.3%		
Parking meter repair, water meter repair ..	3	.4%		
Cement products	2	.3%		
Manufacturing nursery pots	1	.1%		
Repairs safety equipment, respirators, etc.	5	.7%		
Door mats, chair caning, rug weaving, other "blind" products	2	.3%	1	.1%
Dye house worker	1	.1%		
Aircraft mechanic	2	.3%		
Total	752	100.3%	140	18.2%

612 persons of the total interviewed listed no secondary duties.

<i>Time Spent on Main and Secondary Duties</i>	<i>Number</i>	<i>Percent of Total</i>
Full time job—all time spent on main job	572	76.1%
Part-time job but all time spent on main job	19	2.5%
Full time job—"occasional" secondary duties for less than one hour per week	30	4.0%
Full time job—secondary duties of 1 to 3 hours per week ...	41	5.5%
Full time job—secondary duties of 4 to 6 hours per week ...	30	4.0%
Full time job—secondary duties of 7 to 10 hours per week ..	15	2.0%
Full time job—secondary duties of 11 to 13 hours per week .	1	.1%
Full time job—secondary duties of 14+ hours per week	21	2.8%
Part-time job with secondary duties	3	.4%
Full time job and part-time job	20	2.7%
Total	752	100.1%
All employees holding full time jobs	730*	97.1%*
All employees holding part-time jobs	42*	5.6%*

* Number greater than 752 and percent total more than 100 since some employees had both full time and part time jobs.

	Number	Percent of Total
<i>Tools</i>		
None	248	33.0%
Usual tools for job—no changes (1)	404	53.7%
Usual and some adaptations made by employees (2)	17	2.3%
Usual and some adaptations made to order by others (3)	19	2.5%
Usual and some adaptations—found on open market (4)	57	7.6%
(2) and (3)	2	.3%
(2) and (4)	3	.4%
(2) and (3) and (4)	1	.1%
(3) and (4)	0	—
Not stated	1	.1%
Total	752	100.0%
Total (2)	23	3.1%
Total (3)	22	2.9%
Total (4)	61	8.1%
<i>Machines</i>		
None	212	28.2%
Usual machines for job—no changes	505	67.2%
Some adaptations—made by employee (2)	10	1.3%
Some adaptations—made to order by any outside source (3) ..	11	1.5%
Some adaptations—standard and available from AFB, etc. (4) ..	12	1.6%
(2) and (3)	0	—
(2) and (4)	1	.1%
(2) and (3) and (4)	0	—
(3) and (4)	0	—
Total	752	99.9%
Total (2)	11	1.5%
Total (3)	11	1.5%
Total (4)	13	1.7%
<i>Records Kept Now or Ever on This Job</i>		
None, or kept by others for him	436	58.0%
For self only—ink, pencil, typed, other written	38	5.1%
For self only—braille	55	7.3%
For self only—other	17	2.3%
For employer—ink, typed, printed	133	17.7%
For employer—braille, then translated	18	2.4%
For employer—other or method not indicated	18	2.4%
Records—but for whom and/or method not indicated	12	1.6%
For self and employer	20	2.7%
No information	5	.7%
Total	752	100.2%
<i>How Perform Job—Help Received</i>		
Independent and exactly as seeing worker—no help, special tools, etc.	296	39.4%
Independent and exactly as seeing worker—with special tools, etc.	31	4.1%
Has help but seeing would too	21	2.8%
Occasional help—making erasures, reading, writing, records ..	152	20.2%
Occasional help—other visual tasks	125	16.6%

	Number	Percent of Total
Occasional help—travel and mobility	16	2.1%
Frequent help—reading, writing, records	44	5.8%
Frequent help—other visual tasks	17	2.3%
Frequent help—travel, mobility	11	1.5%
Simply does not do certain parts of job	39	5.2%
Total	752	100.0%

Source of Help

None whatever	323	43.0%
Assistant paid by employer (as secretary, etc.)	24	3.2%
Fellow employee (does it voluntarily, not paid to do it)	286	38.0%
Supervisor—or other company person	59	7.8%
Member of family	40	5.3%
Unpaid volunteer (not family or fellow worker)	5	.7%
Paid helper (paid by client, as paid reader)	13	1.7%
No answer	2	.3%
Total	752	100.0%

Decisions

None	249	33.1%
Minor, structured by job—as rejection of poor quality or planning time	274	36.4%
Occasional decisions of moderate importance, but rare	47	6.3%
Frequent decisions of moderate importance	67	8.9%
Occasional decisions of great importance to job	6	.8%
Completely responsible (as own business or department head) but effects could harm no one	87	11.6%
Completely independent and decisions could hurt others if incorrect, as affect health	15	2.0%
No information	7	.9%
Total	752	100.0%

Employee Relations

None	466	62.0%
Part of team or works in line where poor performance penalizes or hinders others	169	22.5%
Has some part-time responsibility for others, making occasional decisions which affect them or being occasionally responsible for their welfare (2)	22	2.9%
Same as (2) but rather frequent	6	.8%
Supervisory responsibility, therefore frequently affects the production or satisfaction of others.	70	9.3%
Major union activities	3	.4%
No information	14	1.9%
Not stated	2	.3%
Total	752	100.1%

Public Contacts

None	397	52.8%
Occasional—as answer phone, occasional person comes in	108	14.4%
Frequent—same level as above but still not chief aspect of job ..	52	6.9%
Main content of job but structured—as a sales-service job	69	9.2%
Main content—some responsibility and ingenuity involved	47	6.3%
Owens business—gets all work from public	45	6.0%

	<i>Number</i>	<i>Percent of Total</i>
Frequent contacts of type which could affect important attitudes toward profession or employer	22	2.9%
No information	12	1.6%
Total	752	100.1%
<i>Responsibility for Money, Valuables</i>		
Routine responsibility for employer's property	558	74.2%
More than routine but not money	49	6.5%
Responsible for money—accepting and safeguarding moderate sums—up to \$100	33	4.4%
Responsible for money—accepting and safeguarding large sums —over \$100	22	2.9%
Makes decisions regarding small expenditures	6	.8%
Makes decisions regarding large expenditures	6	.8%
Runs own business—responsible for its success	68	9.0%
No information	5	.7%
Not stated	5	.7%
Total	752	100.0%
<i>Supervision Received</i>		
None—self-employed	77	10.2%
Very little because of long experience	211	28.1%
Very little because work (product) automatically inspected	65	8.6%
Checks records and/or occasionally observes in action	36	4.8%
Occasional check of work or machine	60	8.0%
Little supervision—no qualifications	162	21.5%
Frequent but other workers do also	47	6.3%
Supervision but amount not indicated	71	9.4%
More than usual but only because new on job, <i>not</i> because blind	4	.5%
More than usual because blind	19	2.5%
Total	752	99.9%
<i>How Employee Feels about Supervision</i>		
No supervision	79	10.5%
Helpful and lenient	24	3.2%
Likes amount	526	69.9%
Felt it was inadequate	9	1.2%
Dislikes because too frequent and strict	8	1.1%
Supervision insufficient, would like closer relationship	15	2.0%
Indifferent—"doesn't mind it"	18	2.4%
No information	73	9.7%
Total	752	100.0%
<i>How Work Checked</i>		
Not checked	42	5.6%
Only by attitude of patients, clients, customers	154	20.5%
Occasional check of product or work	50	6.6%
Regular and frequent inspection of work or product	142	18.9%
Every product or all work inspected directly or indirectly	218	29.0%
Occasional check of records	7	.9%
Check of records and some observation	19	2.5%
Occasional observation of work being done	44	5.9%
Employee doesn't know	27	3.6%
No information	49	6.5%
Total	752	100.0%

	Number	Percent of Total
<i>Supervise Others</i>		
Does not supervise	515	68.5%
Occasional or part-time supervision	130	17.3%
Usually one—probably a helper	39	5.2%
2 to 4 others	39	5.2%
5 to 9 others	12	1.6%
10 or more in one area	7	.9%
Supervises large area, not all one room, as complex department or small plant	2	.3%
Not stated	8	1.1%
Total	752	100.1%
<i>Adaptations in Work Space</i>		
None—works in home	30	4.0%
Simple—small area, no moving equipment, no real hazards—no adaptations (1)	307	40.8%
Moderate size—some hazards or large, but no hazards such as machinery (2)	200	26.6%
Complex—definite hazards—large areas, moving equipment or machinery—no adaptations (3)	166	22.1%
(1) with adaptations	10	1.3%
(2) with adaptations	2	.3%
(3) with adaptations	4	.5%
Moves from place to place—as piano tuner	19	2.5%
No information	14	1.9%
Total	752	100.0%
<i>How Obtain Job or Start Business</i>		
No information or already employed when lost vision	9	1.2%
State agency for blind	429	57.0%
Private agency for blind	17	2.3%
School for blind	6	.8%
Other school or training organization	7	.9%
Family	16	2.1%
Friends, minister, former employer, etc.	62	8.2%
Just answered ad or otherwise found on own	157	20.9%
Public or private employment agency for seeing	19	2.5%
Started business for self without assistance from any of above ..	30	4.0%
Total	752	100.0%
<i>Training for Job</i>		
Absolutely none (as started own business with no help or prep- aration)	28	3.7%
On the job only—provided by employer	459	61.0%
On the job only—subsidized by outside source	10	1.3%
Trained by regular schools or schools for blind through high school*	26	3.5%
Trained by regular schools and/or special courses*	99	13.2%
Technical or business schools beyond high school but not full college*	65	8.6%
College*	8	1.1%
Apprenticeship*	15	2.0%
Regular school and apprenticeship*	9	1.2%
Technical school and apprenticeship*	33	4.4%
Total	752	100.0%

* Some on the job training assumed in these categories.

	Number	Percent of Total
<i>Period to Learn Related to Blindness</i>		
Not applicable—self-employed or started as seeing person	37	4.9%
Faster than sighted because of blindness or some skill developed because of blindness	13	1.7%
Faster than most sighted but <i>not because</i> blind	11	1.5%
Same as sighted—"no problems" or same problems as sighted . .	313	41.6%
Slower or had problems with some parts but overcame them (general implication that this was not great or lasting handi- cap)	120	16.0%
Generally slower than sighted	25	3.3%
No information	232	30.8%
Not stated	1	.1%
Total	752	99.9%

Problems in Learning Job

Not applicable, as learned as seeing person—brought up in busi- ness	37	4.9%
Blindness or skills developed because of blindness some advan- tage	6	.8%
No problems	233	31.0%
Difficulty with reading, records—associated visual tasks (as use of regular tools or machines)	101	13.4%
Nervousness, lack of confidence, fear	61	8.1%
Spelling, concentrating and other problems sighted would have also	39	5.2%
Resentful of overprotection, etc. (employers, employees he super- vises, supervisors, co-workers) Any negative, ill feeling	39	5.2%
Attaining speed, production	63	8.4%
Any combination of the above or not covered in above	111	14.8%
No information	62	8.2%
Total	752	100.0%

Length of Time before Proficient or up to Production

Not applicable, learned as seeing person	26	3.5%
Still learning	32	4.3%
1-6 days	105	13.9%
1-4 weeks	144	19.1%
1-3 months	147	19.5%
3-6 months	73	9.7%
7 months to 1 year	62	8.2%
More than a year	43	5.7%
No information	120	16.0%
Total	752	99.9%

How Efficiency, Success Measured

No measure	14	1.9%
By success of business—attitude of customers (1)	128	17.0%
Observation and opinion of supervisor (management only) (2) .	239	31.8%
Formal ratings or tests (3)	105	14.0%
Completion of work on time (4)	26	3.5%
Amount of work or product produced (5)	86	11.4%
Accuracy of work produced (6)	33	4.4%
(5) and (6)	85	11.3%

	<i>Number</i>	<i>Percent of Total</i>
Any combination of (1) through (7)	14	1.9%
No information	22	2.9%
Total	752	100.1%
Total (5)	171	22.7%
Total (6)	118	15.7%

Amount Compared to Sighted

Better than sighted (blindness an advantage)	94	12.5%
Exactly same	508	67.6%
Not known by individual	33	4.4%
Same but minor exceptions	33	4.4%
Generally slower or produces less	50	6.6%
Too new in job to be sure	2	.3%
No information	30	4.0%
Not stated	2	.3%
Total	752	100.1%

Union Relationships

No union, not applicable	530	70.5%
Member—inactive	28	3.7%
Member—dues (3)	82	10.9%
Member—attends meetings (4)	26	3.5%
(3) and (4)	35	4.7%
Holds office	13	1.7%
Union present—not member	32	4.3%
No information	6	.8%
Total	752	100.1%
Total (3)	117	15.6%
Total (4)	61	8.1%

Wages and Opportunities—How Affected

No information	23	3.1%
Better than sighted (blindness an advantage)	3	.4%
Excellent! Definite chance to advance, enthusiastic, positive ...	30	4.0%
Same as sighted—average	278	37.0%
Wages present job same as sighted but opportunity limited (and thus salary) because of blindness	212	28.2%
Wages not affected—opportunity limited because of nature of job (no place to advance)	67	8.9%
Wages not affected but opportunity limited, reason not indicated	11	1.5%
Wages and/or opportunities less than sighted	100	13.3%
Wages not affected—no information on opportunity	24	3.2%
Not stated	4	.5%
Total	752	100.1%

Income on Weekly Basis (40-hour week assumed)

Not given	57	7.6%
Up to and including \$39.00	52	6.9%
\$40-\$54	120	16.0%
\$55-\$69	153	20.3%
\$70-\$84	128	17.0%

	Number	Percent of Total
\$85-\$99	93	12.4%
\$100-\$114	88	11.7%
\$115-\$129	30	4.0%
\$130-\$144	11	1.5%
\$145 plus	19	2.5%
Total	752	99.9%

How Feel About Job

Very interested—definitely positive (1)	257	34.2%
Likes—but monotonous, dirty, etc. (2)	57	7.6%
Likes—but not in accordance with preparation (3)	7	.9%
Likes—but not well paid or no opportunity (4)	61	8.1%
Likes—no qualifications or reservations (5)	245	32.6%
Indifferent	29	3.9%
Combinations of (1) through (5) or not listed	9	1.1%
Dislikes—negative feelings	38	5.1%
No information	47	6.2%
Not stated	2	.3%
Total	752	100.0%

Time on Present Job

Less than 1 year	84	11.2%
1-2 years	147	19.5%
3-4 years (1)	128	17.0%
5-6 years	89	11.8%
7-8 years	55	7.3%
9-10 years	36	4.8%
11-12 years (2)	36	4.8%
13-14 years (3)	34	4.5%
15+ years	84	11.2%
No information	58	7.7%
Not stated	1	.1%
Total	752	99.9%

Time with Company

Not applicable (in business for self)	29	3.9%
Less than one year	72	9.6%
1-2 years	130	17.3%
3-4 years	105	14.0%
5-6 years	81	10.8%
7-8 years	51	6.8%
9-10 years	39	5.2%
11-12 years	44	5.9%
13+ years	158	21.0%
No information	42	5.6%
Not stated	1	.1%
Total	752	100.2%

Reason for Change in Jobs in Present Company

No change or no information	533	70.9%
Not applicable—self-employed	24	3.2%
Job discontinued (2)	32	4.3%
(2) and (7)	6	.8%
Own request for what employee regarded as better job	16	2.1%
Promotion	48	6.4%

	Number	Percent of Total
Automation	11	1.5%
Unable to perform job adequately and/or loss of sight (7)	41	5.5%
Change but no information as to why	40	5.3%
Not stated	1	.1%
Total	752	100.1%
Total (2)	38	5.1%
Total (7)	47	6.3%

Previous Jobs—Held While Employee Blind

None	235	31.3%
Related—competitive (1)	193	25.7%
Unrelated—competitive (2)	194	25.8%
Shelter shop, selling blind-made products, working for school for blind or agency for blind—any non-competitive (3)	56	7.4%
(1) and (2)	26	3.5%
(1) and (3)	9	1.1%
(2) and (3)	15	2.0%
(1) and (2) and (3)	4	.5%
No information or combinations of above	14	1.9%
Not stated	6	.8%
Total	752	100.0%
Total (1)	232	30.9%
Total (2)	239	31.8%
Total (3)	84	11.2%

Previous Jobs—Held While Employee Sighted

None	543	72.2%
Related	80	10.6%
Unrelated	97	12.9%
Both	9	1.2%
No report	18	2.3%
Not stated	5	.7%
Total	752	99.9%
Total related	89	11.8%
Total unrelated	106	14.1%

Amount of Vision

Totally blind	176	23.4%
Light perception	106	14.1%
Objects but not enough to be much help in travel	44	5.9%
Travel vision—no print	93	12.4%
Print only briefly or under unusual circumstances	31	4.1%
Limited reading	193	25.7%
Can read as necessary (with visual aids if necessary)	100	13.3%
No information—not clear	5	.7%
Not stated	4	.5%
Total	752	100.1%

	Number	Percent of Total
<i>Age Became Blind</i>		
No response—no information	22	2.9%
From birth	290	38.6%
1-9 years	172	22.9%
10-19 years	87	11.6%
20-29 years	58	7.7%
30-39 years	69	9.2%
40-49 years	41	5.3%
50-59 years	10	1.3%
60-69 years	1	.1%
70+ years	2	.3%
Total	752	99.9%
<i>Loss Sudden or Gradual</i>		
Sudden	149	19.8%
Gradual—up to one year	47	6.3%
Gradual—over more than one year	169	22.5%
Blind since birth	143	19.0%
Vision was worse—some improvement due to operation or lenses	28	3.7%
Gradual but varies—sometimes better	15	2.0%
Impairment at birth but gradual worsening	170	22.6%
No information or not clear	31	4.1%
Total	752	100.0%
<i>How Long Vision as Now</i>		
Unclear—no information	102	13.6%
Still changing	59	7.8%
Less than one year	7	.9%
1-3 years	42	5.6%
4-6 years	55	7.3%
7-9 years	49	6.5%
10-12 years	38	5.0%
13-15 years	45	6.0%
16-18 years	31	4.1%
19+ years	324	43.1%
Total	752	99.9%
<i>Cause of Visual Loss</i>		
No information	4	.5%
Congenital—serious or total from birth	144	19.1%
Congenital—not serious until much later—gradual loss	185	24.6%
Trauma	147	19.5%
Any illness or disease, including diseases of the eye	250	33.3%
Tumor of and/or brain surgery or brain damage—damage not from accident but from growth and/or surgery	15	2.0%
Not stated	7	.9%
Total	752	99.9%
<i>What Difference Did Blindness Make?</i>		
No difference	64	8.5%
Affected education or work or both	169	22.5%
Affected reading and other visual tasks	13	1.7%

	Number	Percent of Total
Affected travel, including driving	50	6.7%
Affected social life, friendships	27	3.6%
Caused doubts by public, employers, friends (might affect four preceding but emphasis is not on being unable to do things but on others not believing could do.)	7	.9%
Inconvenience, general nuisance, etc. Affects recreation, etc.— not basic things	29	3.9%
Combinations of above or not listed	183	24.3%
Positive effect (more ambitious, appreciative, etc.)	48	6.4%
No information or cannot say because always blind, etc.	161	21.4%
Not stated	1	.1%
Total	752	100.0%

How Others Feel About Blindness

Partial vision—family and friends not conscious of blindness, pretty much regard as seeing	52	6.9%
Overprotect	18	2.4%
Some accept, some do not, lack understanding	154	20.5%
All accept—pay little attention to it, give suitable help as needed	455	60.5%
Has often experienced lack of understanding	16	2.1%
Others admire for accomplishments	6	.8%
No information	45	6.0%
Not stated	5	.7%
Total	752	99.9%

Amount of Travel for Job

None (works in own home)	29	3.9%
To and from work only and in place of employment (very limited movement implied)	382	50.8%
To and from work and lot of in-plant movement—complex in- plant travel	256	34.0%
To and from, in plant, and occasionally outside (as to another branch, errands, etc.)	32	4.3%
Local travel is part of job—frequent	24	3.2%
Local travel frequent and some distant	10	1.3%
Frequent over wide area	1	.1%
No information	17	2.3%
Not stated	1	.1%
Total	752	99.9%

Travel Other Than Job

None—definitely a non-traveler	10	1.3%
Occasional—sounds somewhat limited	142	18.9%
Travels where necessary—mostly local or familiar routes	241	32.0%
Travels a lot—no sign of limitation	268	35.6%
Occasional—because of physical limitation other than blindness	5	.7%
Frequently—but some limitation	50	6.7%
No information	34	4.5%
Not stated	2	.3%
Total	752	100.0%

	Number	Percent of Total
<i>Mode of Travel</i>		
No information	13	1.7%
Travel vision—no aids	280	37.2%
Travel vision—some use of cane	31	4.1%
Travel vision—some use of guide	98	13.0%
Cane—no guide	51	6.8%
Cane—some use of guide and vice versa	209	27.8%
Dog—at all times	5	.7%
Dog—sometimes cane or guide	28	3.7%
Never without guide	25	3.3%
Independent in place of employment, guide outside	11	1.5%
Not stated	1	.1%
Total	752	99.9%

<i>Importance of Travel to Employment</i>		
Definitely necessary—important, imperative	368	48.9%
May be important but not <i>necessary</i>	76	10.1%
Depends on job	26	3.4%
Not a factor in holding job	31	4.1%
To and from not important, but must be able to get in and out of place of employment without aid	3	.4%
No report—irrelevant replies	240	31.9%
Not stated	8	1.1%
Total	752	99.9%

<i>Travel Training—Source and Amount</i>		
None	496	66.0%
Agency staff—casual	41	5.5%
Agency staff—formal—"full course"	44	5.9%
Adjustment training center	56	7.4%
Residential school course	31	4.1%
Full course—source not indicated	10	1.3%
Casual—source not indicated, taught by friend	17	2.2%
Training related to use of dog	15	2.0%
From several of above	12	1.6%
No information	29	3.9%
Not stated	1	.1%
Total	752	100.0%

<i>Amount of Education</i>		
Never any formal schooling or no information	11	1.5%
1 to 6 grades	52	6.9%
7-8-9 grades	124	16.5%
10-11-12 but <i>not</i> high school graduate	107	14.2%
High school graduate	256	34.0%
Some college level—up to and including three full time years. Junior college.	71	9.4%
College level or degree with specific diploma (as physical ther- apy) (6)	34	4.5%
College, beyond No. (6). Some graduate work.	8	1.1%
Casual technical courses or business— <i>no</i> diploma	39	5.2%

	Number	Percent of Total
Technical courses or business—diploma or course definitely completed	48	6.4%
Not stated	2	.3%
Total	752	100.0%

Nature of Education

None—no formal education or not listed	7	.9%
All sighted—no significant visual difficulty in public school	226	30.1%
Sighted—then loss—stay in regular school classes	40	5.3%
Sighted—then loss—sight-saving or braille in public school ...	17	2.2%
Sighted—then loss—residential school	41	5.5%
All blind but in public school	146	19.4%
All blind, residential school	168	22.3%
Any pattern of residential <i>followed</i> by public	31	4.1%
All blind—public school <i>followed</i> by residential	53	7.0%
No information	21	2.8%
Not stated	2	.3%
Total	752	99.9%

Marital Status

No information	7	.9%
Single	221	29.4%
Married	458	60.9%
Widowed	21	2.8%
Separated or divorced	38	5.1%
Not stated	7	.9%
Total	752	100.0%

Children and/or Responsibility for Others

No one	238	31.6%
Spouse only or one child	126	16.8%
Spouse and one child—or two children, no spouse	95	12.6%
Husband and wife co-earners	50	6.6%
Parent(s)	13	1.7%
Spouse—2 to 5 children	195	25.9%
Spouse—6 or more children	13	1.7%
Others—as grandchildren, aunt, uncle, etc.—not original family unit of parents or spouse	9	1.2%
Not indicated—no response	12	1.6%
Not stated	1	.1%
Total	752	99.8%

With Whom Live

Entirely alone—own house or apartment. Implies takes care of own affairs entirely	94	12.5%
Roomer—not with relatives	49	6.5%
Roomer—with relatives, not parents	15	2.0%
With parent(s)	84	11.2%
With spouse and/or children, if any—own apartment or home ..	462	61.4%
With children, as roomer or dependent in their home	2	.3%
With roommate—not a “roomer” but shares apartment or home	14	1.9%

	<i>Number</i>	<i>Percent of Total</i>
Own home—relatives live with	16	2.1%
No information	14	1.9%
Not stated	2	.3%
Total	752	100.1%

Family Relations

Satisfactory or no information	663	88.2%
Some evidence of difficulty	35	4.7%
No family near	48	6.4%
Not stated	6	.8%
Total	752	100.1%

Group Participation

None whatever	232	30.9%
Professional, business, union (1)	35	4.7%
Social, recreational, church (2)	255	33.9%
Blind or handicapped (3)	58	7.7%
(1) and (2)	36	4.8%
(1) and (3)	7	.9%
(2) and (3)	67	8.9%
(1) and (2) and (3)	19	2.5%
Civic—as Red Cross, etc.	13	1.7%
No information	29	3.9%
Not stated	1	.1%
Total	752	100.0%
Total (1)	97	12.9%
Total (2)	377	50.1%
Total (3)	151	20.6%

Employee Contacts off Job

Not relevant (as own small business, etc.)	76	10.1%
None	259	34.4%
Occasional—home visits, goes to church, movies with, etc.	210	27.9%
Extensive social contact	67	8.9%
Seldom	67	8.9%
No information	71	9.4%
Not stated	2	.3%
Total	752	99.9%

Hobbies and Recreation (A)

None whatever	52	6.9%
Making things, using hands, work around home (1)	78	10.4%
Sports—active (2)	147	19.5%
Radio, TV, records, reading, listening, movies, games, cards (3)	133	17.7%
Music—playing or singing— <i>active</i> , other creative	47	6.3%
Visiting—people-oriented	19	2.5%
(1) and (2)	30	4.0%
(2) and (3)	72	9.5%
Any other combination or any not listed*	154	20.5%

	Number	Percent of Total
No information	17	2.3%
Not stated	3	.4%
Total	752	100.0%
Total (1)	108	14.4%
Total (2)	249	33.1%
Total (3)	205	27.3%

Hobbies and Recreation (B)

* With combination category broken down and numbers added to appropriate classification:

None whatever	52	6.9%
Making things, using hands, work around home (1)	123	16.4%
Sports—active (2)	208	27.7%
Radio, TV, records, reading, listening, movies, games, cards (3)	224	29.8%
Music—playing or singing— <i>active</i> , other creative	99	13.2%
Visiting—people-oriented	51	6.8%
(1) and (2)	31	4.1%
(2) and (3)	86	11.4%
Miscellaneous	16	2.1%
No information	17	2.3%
Not stated	3	.4%

The total is greater than 752 and percent greater than 100 because some people listed more than one hobby or form of recreation.

Total (1)	154	20.5%
Total (2)	239	31.8%
Total (3)	310	41.2%

How Contact Agency

Doesn't know or remember	30	4.0%
Through school	127	16.9%
Agency made contact	119	15.8%
Through sheltered shop	6	.8%
On own—because of need of services	111	14.8%
Referred by doctor, civic group, employment agency, government agency, counselor (school), etc.	143	19.0%
Referred by family member or friend	54	7.2%
Referred by private agency	16	2.1%
No contact—not applicable	52	6.9%
No information	93	12.4%
Not stated	1	.1%
Total	752	100.0%

How Feel About Agency

No contact—not applicable	53	7.1%
Inadequate—could have been more helpful	59	7.8%
Assistance adequate	341	45.3%
Best possible—definitely positive	149	19.8%
Completely negative	37	4.9%
Positive—some reservation(s)	51	6.8%
Services inadequate because of state or agency restrictions	12	1.6%
No report	48	6.4%
Not stated	2	.3%
Total	752	100.0%

	Number	Percent of Total
<i>Suggestions Regarding Agency (A)</i>		
No answer	320	42.6%
More active in discovering opportunities for blind	40	5.3%
Assure or acclimate blind before placing	7	.9%
Understand clients' capabilities and desires better	26	3.5%
Counselors should be more interested and more readily available	22	2.9%
More training in specific job areas	17	2.3%
Should serve faster—too slow	12	1.6%
Combinations of above or not listed*	57	7.6%
No contact—not applicable	12	1.6%
No suggestions	238	31.6%
Not stated	1	.1%
Total	752	100.0%

Suggestions Regarding Agency (B)

* With combination category broken down and numbers added to appropriate classification:

No answer	320	42.6%
More active in discovering opportunities for blind	56	7.4%
Assure or acclimate blind before placing	12	1.6%
Understand clients' capabilities and desires better	43	5.7%
Counselors should be more interested and more readily available	38	5.1%
More training in specific job areas	22	2.9%
Should serve faster—too slow	18	2.4%
Miscellaneous	17	2.3%
No contact—not applicable	12	1.6%
No suggestions	238	31.6%
Not stated	1	.1%

Total greater than 752 because some persons listed more than one suggestion, and percent greater than 100.

Other Agencies Used

None/no information	625	83.1%
State welfare	23	3.1%
Other agency but not named	5	.7%
Center for the blind or private agency for blind	66	8.8%
Government bureau, including VA	16	2.1%
Federation for Blind	4	.5%
Another state agency for blind	4	.5%
Goodwill, etc.—agencies which serve all handicapped	2	.3%
Combinations of above	5	.7%
Not stated	2	.3%
Total	752	100.1%

Attitude Toward Other Agencies

No other agencies—not applicable	592	78.7%
Help "wonderful"	15	2.0%
Help adequate	41	5.5%
Negative feelings	15	2.0%
No information	85	11.3%
Not stated	4	.5%
Total	752	100.0%

	Number	Percent of Total
<i>Other Physical Problems</i>		
None	603	80.2%
Arthritis, rheumatism	9	1.2%
Heart condition	14	1.9%
Hearing defect	10	1.3%
Back condition	6	.8%
Glandular condition	2	.3%
Asthma, allergy, any respiratory ailment	7	.9%
Diabetes	15	2.0%
Speech impediment	4	.5%
Osteomyelitis	3	.4%
Stomach disorder	8	1.1%
Nervous condition	11	1.5%
No information	6	.8%
Leukemia, cancer	3	.4%
Combinations of ailments	19	2.5%
Paralysis, residuals of polio, limp, any ailment which affects walking	10	1.3%
Weight problems	1	.1%
Hernia, rupture	3	.4%
Miscellaneous	14	1.9%
Epilepsy	3	.4%
Not stated	1	.1%
Total	752	100.0%

Advice to Other Blind

None or not asked	187	24.9%
Get help—see agency, get advice, counseling	64	8.5%
Get travel, adjustment, other general training. Be able to travel Be cooperative, friendly, sociable, try to make people like you, adjust to others, be alert	12	1.6%
Work hard, do good job, perhaps a better job than others, be steady, don't be absent, do your best	75	10.0%
Have confidence in self, try what is offered, make up mind to do it, accept self and blindness, don't mope or be sorry for self, be independent, have courage, patience, do things for yourself . . .	139	18.5%
Be like sighted, stay with sighted people, etc.	185	24.6%
Learn braille, other communication skills, get good education ..	32	4.3%
Be neat, make good appearance	41	5.5%
Miscellaneous	2	.3%
Not stated	14	1.9%
Total	1	.1%
Total	752	100.2%

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Film Developer (non-medical)	976.381
Film Splicer	962.844
Flat or Case Repairer	760.884
Floral Designer	142.081
Flower Pot Maker	794.884
Foam-Machine Operator	559.885
Food & Beverage Services	311.878
Food Packager	920.885
Food Service Supervisor	319.138
Foreman, Fabricating	780.137
Foreman, Upholstery	780.137
Frankfurter Skinner	525.887
Furniture Assembler	763.884
Furniture Parts (Metal) Assembler	866.381
Furniture Repairman (Upholsterer)	780.884
Game Room or Locker Room Supervisor	358.878
General Office Clerk	219.388
Glass Installer (Glazier) Helper	865.887
Glove Shaper	789.887
Grocery Bagger	920.887
Guard & Guide, Museum	353.368
Hairdresser	332.271
Hammerer & Bag Turner	583.885
Harness Fabricator or Cable Maker (Aircraft)	726.884
Helper, Glazier	865.887
Helper, Kitchen	318.887
Helper, Painter	845.884
Helper, Shoe Repairman	365.381
Helper, Vending Stand	318.887
Hemmer (Sewing Machine Operator)	786.782
Histology Technician	078.381
Honing Machine Operator	603.782
Hotel or Motel Clerk and similar employment	242.368
Housemother—Nursery School Aid	359.878
Hydraulic Press Operator	706.884

Injection Molding Machine Operator	556.782
Insertor Operator	234.885
Inspector	619.281
Inspector, Carton	920.687
Instructor, Auto Mechanics	620.281
Instrument Repairman	710.281
Insulator	724.887
Interpreter (Navajo)	137.268
Investigator, Credit	205.368
Janitor—Custodian	382.884
Kennelman	356.874
Kitchen Helper	318.887
Labeler or Packager (Machine)	920.885
Laboratory Machinist	600.280
Laborer (Miner Helper)	850.887
Laborer, Road & Construction	850.887
Lathe Operator	604.380
Lathe Operator Metal	604.885
Laundry Worker	369.884
Lead Former	691.885
Leather Goods Maker	763.884
Leather Handbag Worker	583.885
Legal Clerk	201.368
Librarian Aid, Cataloguer	100.388
Light Fixtures Assembler	723.884
Line Assembler	723.884
Locker Room or Game Room Supervisor	358.878
Machinist, Laboratory	600.280
Maid (Babysitter)	306.878
Mail Clerk, Distribution Clerk	231.588
Mailer	239.587
Maintenance Man, Building	899.381
Maintenance Supervisor	184.168
Masseur—Masseuse	334.878
Materials Handler	929.877
Meat Processing & Distribution	525.887
Mechanic, Automobile	620.281
Mechanic, Mechanic's Helper, Repairman	621.781
Medical Transcriptionist	201.368
Messenger Supervisor	230.138
Metal Bonder	518.885
Metal Cleaner, Immersion	503.885
Metal Parts Assembler	866.381
Meter Repairman	710.281
Microphotographer	207.885
Milling Machine Operator	605.885
Miner Helper (Laborer)	850.887
Mining Wedge Maker	769.887
Molding Machine Operator—Injection	556.782
Motel or Hotel Clerk and similar employment	242.368
Museum Guard & Guide	353.368
Museum Registrar	100.388

Navajo Interpreter	137.268
Newspaper Office Assistant	132.268
Night Watchman	372.868
Nurse's Aid	355.878
Nursery School Aid—Housemother	359.878
Occupational Therapy Aid	355.878
Office Clerk, General	219.388
Office Equipment Subassembler	706.884
Operator, Bandsaw	607.782
Operator, Blister Packing Machine	920.885
Operator, Blue Printing Machine	979.782
Operator, Broaching Machine	603.782
Operator, Dial Punch Press	617.885
Operator, Die Press	699.782
Operator, Dowel-Machine	665.782
Operator, Drill Press	606.782
Operator, Elevator	388.868
Operator, Foam-Machine	559.885
Operator, Honing Machine	603.782
Operator, Hydraulic Press	706.884
Operator, Injection Molding Machine	556.782
Operator, Inserter	234.885
Operator, Lathe	604.380
Operator, Lathe (Metal)	604.885
Operator, Milling Machine	605.885
Operator, Ozalid Machine	979.782
Operator, Packaging or Labeling Machine	920.885
Operator, Picture Frame Machine	739.884
Operator, Production Machine	609.885
Operator, Punch Press	617.885
Operator, Riveting Machine	800.782
Operator, Rope Laying Machine	681.885
Operator, Sewing Machine (Hemmer)	786.782
Operator, Steel Shear (Sheet Metal)	615.782
Operator, Switchboard	235.862
Operator, Telephone	235.862
Operator, Threading Machine	604.782
Operator, Turning Machine	589.885
Operator, Turret Lathe	604.380
Order Taker, Telephone	249.368
Orderly, Nurse's Aid (General & Central Supply)	355.878
Ornament Maker, Concrete	575.781
Ozalid or Blue Printing Machine Operator	979.782
Package Sealer	920.885
Packager, Food	920.885
Packager (Hand)	920.887
Packager or Labeler (Machine)	920.885
Packing (Blister) Machine Operator	920.885
Painter's Helper	845.884
Pan Greaser or Washer, Bakery	526.886
Paper Trimmer	640.885
Paperboard Box Maker	794.884
Personnel Assistant	166.268
Piano Technician	730.281
Piano Tuner	730.381

Physical Therapy Aid	355.878
Picture Frame Machine Operator	739.884
Plumber	862.381
Polisher, Sander, Buffer	705.884
Pot Washer; Dishwasher	318.887
Poultry Packer or Processor	525.887
Preparer, Beam (Textile Industry)	681.886
Presser (Valet)	363.782
Processing & Distribution, Meat	525.887
Production Assembler	708.887 & 723.884
Production Machine Operator	609.885
Production Technician (Wire Cutter or Lead Former)	691.885
Punch Press Operator	617.885
Radio Recording Director	194.282
Radio & Television Repairman	720.281
Ready-Mix Concrete (owner-manager)	570.132
Reamer	606.782
Receptionist	235.862
Recording Director, Radio	194.282
Refinisher, Appliance	741.884
Registrar (museum)	100.388
Repairer, Case or Flat	760.884
Repairman, Automobile	620.281
Repairman, Boilerhouse	899.381
Repairman, Electrical Appliance	723.381
Repairman, Instrument	710.281
Repairman, Meter	710.281
Repairman, Radio & Television	720.281
Repairman, Shoe	365.381
Repairman, Telephone	722.281
Reporter, Court	202.388
Representative, Union	187.188
Ribbon Winder	733.887
Riveting Machine Operator	800.782
Road & Construction Laborer	850.887
Roll Turner (knit goods)	589.885
Room Service Waiter or Waitress	311.878
Rope Laying Machine Operator	681.885
Rug Weaver	763.884
Sander, Buffer, Polisher	705.884
Saw Sharpener	701.381
Scientific Helper (Experimentee)	199.384
Sealer, Packages	920.885
Secretary	201.368
Service Station Worker (owner)	915.587
Sewing Machine Operator (Hemmer)	786.782
Sharpener, Saws	701.381
Sheet Metal (Steel Shear) Operator	615.782
Shoe Repairman—Helper	365.381
Short Order Cook	311.878
Sign Maker	970.081
Sleever (Lead Former)	691.885
Social Work Aid	195.108
Splicer, Film	962.844
Spot Welder	810.782

Stacker (Lamination) and Burner (Batteries)	729.884
Steel Shear (Sheet Metal) Operator	615.782
Stenographic Service (owner-manager)	202.388
Stitcher, Broom	692.782
Stockroom Worker	223.387
Street Cleaner	955.887
Stripper (Electrical Appliance Serviceman Helper)	827.887
Subassembler (Typewriters & Office Equipment)	706.884
Supervisor, Food Service	319.138
Supervisor, Locker or Game Room	358.878
Supervisor, Maintenance	184.168
Supervisor, Messengers	230.138
Supply Clerk (Stock Clerk)	223.387
Switchboard—Dispatcher	379.368
Switchboard Operator	235.862
Tapper Operator	606.782
Technician, Histology	078.381
Technician, Piano	730.281
Technician, Production (wire cutter or lead former)	691.885
Telephone Operator	235.862
Telephone Order Taker	249.368
Telephone Repairman	722.281
Television & Radio Repairman	720.281
Textile Beam Preparer	681.886
Therapy Aid	355.878
Threading Machine Operator	604.782
Transcriptionist	208.588
Transcriptionist, Medical	201.368
Transmission Repairman	620.281
Turn Pole (Turning Machine) Operator (knit goods)	589.885
Turret Lathe Operator	604.380
Typewriter Subassembler	706.884
Typist, Dictaphone	208.588
Typist—Switchboard Operator	235.862
Union Business Representative	187.118
Upholsterer	780.884
Upholstery Foreman	780.137
Valet (Presser)	363.782
Vending Stand Helper	318.887
Veneer Clipper	663.885
Veterinarian's Assistant	356.874
Waiter or Waitress (table & room service)	311.878
Warehouse Man	922.887
Watchman (Night)	372.868
Wedge Maker (Mining)	769.887
Weighmaster	224.487
Welder (spot)	810.782
Winder, Ribbon	733.887
Wire Cutter	691.885
Wire Hanger Maker	809.887
Woodworker (own shop)	664.782
Woodworking Shop—Hand	769.887
X-Ray Developer—Darkroom Worker (medical)	976.885

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AMERICAN FOUNDATION FOR THE BLIND
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NEW YORK, N. Y. 10011

